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Problems of Medical Education

Impressions gained from the President's Commission on the Health Needs of the Nation.

JOSEPH C. HINSEY

THE MAIN TOPICS covered in the final report of the President's Commission on the Health Needs of the Nation are: Organization, Research, Financing of Research, Health Services, Special Health Problems and Health Problems of Special Population Groups.

The report consists of five volumes: I, Findings and Recommendations;¹ II, America's Health Status, Needs and Resources; III, America's Health Status, Needs and Resources—A Statistical Appendix; IV, Financing a Health Program for America; and V, The People Speak. These volumes are based upon some 30 panels held on special topics in Washington in which about 400 experts from different walks of life participated, upon eight one-day hearings held in cities over the country, and a vast amount of data collected by the staff.

I don't need to emphasize that if we were to have given the problem assigned exhaustive and full treatment, a period much longer than a year would have been required. There are weaknesses and shortcomings,

and we on the commission would be the first to admit it.

I wish to pay tribute to the work of our chairman, Dr. Paul B. Magnuson, and our vice-chairman, Chester I. Barnard, for their leadership. This group of 15 people of different backgrounds worked together in the spirit of fair play and without acrimony, and ended the year's work on a friendly basis in spite of the fact that there was not a unanimity of opinion on the many different recommendations. This report was made possible by the generous and wholehearted participation of many people.

I cannot condense this material in order to give an adequate review. It is difficult for me to dissociate impressions I received as a member of the Committee on the Survey of Medical Education from those obtained from service on the President's commission. As a matter of fact, there will be little, if anything new in what I have to say that is not known to medical educators.

Medical education in a broad sense means the educational activities of every type carried on in a medical school or center. As Dr. John E. Deitrick has described so well in his work with our Survey on Medical Educa-

Dr. Hinsey is dean of Cornell University Medical College and chairman of the Executive Council of the Association of American Medical Colleges. This article is adapted from his talk at the Congress on Medical Education of the American Medical Association, held in Chicago, February 1953.

tion,² this includes many activities in addition to those immediately related to the education of undergraduate medical students. All of these activities, such as the education of nurses, dentists and all types of paramedical personnel, are of great importance in relation to health, and thus to the physician in training. However, I wish to focus upon just a few of those problems most intimately related to the undergraduate medical training in our medical schools.

Each of our medical schools consists of three essential elements: (1) the students, (2) the staff, and (3) the facilities such as the laboratories, teaching hospitals and their clinical material, the library, housing for students and staff, and the community in which the school is located. Provided individuals are chosen who possess fine character and high ideals and the facilities are adequate, our graduates will finish four years of educational experience as good doctors basically prepared to continue their educational experience.

Is Personnel Needed?

On page 11, Volume 1, these statements are made: "The cry for more personnel was sounded at almost every panel and at every public hearing held by the commission. From the big cities and from the forks of the creek the people asked for more physicians, nurses, dentists, public health personnel and auxiliary medical workers.

"We see no prospect for a great increase in the number of health workers in the near future. The lengthening of the training period of our health professions, an indispensable element in raising the quality of medical care, makes this expansion

process a slow one. We cannot appropriate today and have more health personnel tomorrow. The planning of a medical school, the building of faculty and facilities, can hardly be completed in less than four years. Thus, at least eight years elapse from the beginning of planning until the first students graduate.

"No matter what is done, we can expect continuing shortages in the next few years and must plan with full knowledge of this situation. It is, therefore, essential that we give greater attention to the most efficient utilization of the existing supply as well as to means of increasing it."

Contrary to some newspaper accounts, our commission did not state specifically the needs for additional physicians in the future. On page 13, this statement is made: "We find, therefore, that the expected supply of physicians in 1960 will fall far short of the number needed to meet the need of the American people for broadened medical services." There are two keywords in this statement, (1) *need*, which must be contrasted with demand, and (2) *broadened*, which contemplates a far more comprehensive service for all of our people.

We should not lose sight of this statement: "It is impossible to pinpoint the exact number of physicians we will be short in any future year. At several panel sessions, we heard proponents of specific shortage present figures and advocate their viewpoints with a great air of positiveness. The changing patterns of medical practice, fluctuating demand and variations in the incidence of disease should temper the positiveness of such estimates."

Today we have about 212,000 physicians in this country including those who have retired. By 1960, when our

total population will be about 171 million, it has been calculated that we will have 227,000 physicians. The staff of our commission has calculated the needs in 1960 based upon six premises:

Premise 1—That in 1960 we should have the same over-all physician-population ratio as in 1940: 133 physicians for 100,000 people. This would require 227,000 physicians, which is the anticipated supply.

Premise 2—That in 1960 we should have the same physician-population ratio as in 1949; 135 physicians for 100,000 people. This would require a total of 231,000.

Premise 3—That in 1960 we should have the same civilian-physician-population ratio as in 1949, meet military needs for 5 million mobilization level and expand industrial, public health, medical school faculty and civilian defense personnel as advocated by Dr. Rusk's Health Resources Advisory Committee of the Office of Defense Mobilization. This would require 244,000.

Premise 4—That in 1960, we would need enough physicians to give service to civilians at a rate approximating that given by a comprehensive prepayment service today, provide present levels of interns and resident service in hospitals, meet standards for public health, industrial medical service, staff mental and tuberculosis hospitals at accepted standards, meet staffing standards for medical schools and meet the requirements of the Armed Forces at present levels. This would require 256,000 physicians.

Premise 5—To bring all lower regions of the country to the national average ratio of 131 physicians per 100,000 civilian population (excluding only physicians in Armed Forces) to serve the increased population at that same average level and to meet

the needs of the Armed Forces at present levels. This would require 249,000 physicians.

Premise 6—To provide for military needs and to bring the whole civilian population up to 166 physicians per 100,000 as in New England and Central Atlantic States. This would require 292,000.

In our medical schools, there has been an increase in enrollment and we graduated 6,100 in 1952. This year it will total about 6,400, and by 1960 we should be turning out 7,000 graduate physicians. This will make possible the maintenance of the 1949 over-all physician-population ratio for the expected 1960 population.

However, if we have continued mobilization, our civilians will have fewer physicians than in 1949. On page 12 we stated: "Because physicians make fewer home calls and patients make more office calls than formerly, and also because of technical advances, we have made gains in the availability of physicians' services. But the demand still far outruns supply."

Our two great problems ahead in medical manpower are those attendant to getting better distribution of our medical personnel and of meeting the requirements that will come when demand catches up with need for comprehensive medical service. Looking ahead, political pressures and public opinion will make expansion necessary, as has already been evident in a number of our medical schools. As medical educators, we must be on guard to see that these pressures do not deteriorate standards. In New York State, we have serving on the intern and residency staff of many of our hospitals more than 600 graduates of foreign schools that are below our standards for approval. The educational standards for

Problems of Medical Education

the internship have been ignored for years. If expansions in our own medical schools exceed the facilities, standards inevitably will deteriorate with a reversion to the techniques of mass education that were discarded years ago.

When I heard expressions in discussions in the commission that the only way to meet the problems of distribution and vacancies in many types of governmental service was to create an over-supply with lip service to standards, I responded with the point of view that is expressed in the statement on page 15: "The high standards of instruction in our medical schools must be maintained because the American people have demanded that the present-day physician undergo the most intensive training in classrooms, laboratories and hospitals, before being allowed to assume responsibility for the life and health of his fellow men."

In my opinion, we must train more physicians and do it soundly. The number of candidates applying for medical school has been decreasing

for the past three years. The decrease amounted to 31 per cent (see Tables I and II). There are a number of barriers that keep candidates from gaining admission. First of all, the quality of educational preparation is inadequate. "For many states, providing a higher quality of secondary and college education is another important element in the process of removing barriers to medical education." This is particularly true in areas where there is greater need for medical care.

Secondly, there is the financial barrier to those of limited financial means. It is not only the tuition and other costs directly related to education, but the high living cost which must be defrayed during a long period when there is little or no income.

Scholarships will help, but they are totally inadequate. Many of us have said that any young person who wants a medical education badly enough still can get it. All of us know that there are some of our medical schools where ability to finance enters into favorable consid-

TABLE I*
A Comparison of the Number of Applicants for the Past Five Years

Freshman Year	Number of Applications	Number of Individuals	Applications Per Individual
1947-48	56,279	18,829	3.0
1948-49	81,662	24,242	3.4
1949-50	88,244	24,434	3.6
1950-51	81,931	22,279	3.7
1951-52	70,678	19,920	3.5
1952-53	56,319	16,763	3.4

*Study of Applicants for Admission to United States Medical Colleges Entering in 1952-53. Preliminary Report, by John M. Stalnaker, director of studies, Association of American Medical Colleges.

TABLE II

	1951-52	1952-53	Drop From '51-'52 to '52-'53
Total Individual Applicants.....	19,920	16,763	16%
Total Individuals Re-applying from Last Year	5,989	5,215	13%
Total New Applicants.....	13,931	11,548	17%
Per Cent Accepted from Re-applying Group	30%	38%	
Per Cent Accepted from New Group.....	42%	50%	

There was a 31 per cent drop in applicants for classes of 1949-50 to 1952-53.

eration for admission. We have no data which tell us how many able young people who are potential candidates for medicine are lost because they never start.

Third, the barrier created by the limited capacity of our medical schools.

Fourth, the limitations produced by geographic barriers. I cannot overemphasize the importance of this, page 13: "Geographic restrictions in medical education significantly affect the distribution of physicians, since graduates tend to return to their home areas to practice." Weiskotten and Altenderfer³ have shown that: "The data here presented suggest that, other things being equal, prior residence is the most potent single factor in determining the ultimate place of practice of the graduates of our medical colleges."

One-third of our states do not have four-year medical schools. In 35 of our medical schools, less than 15 per cent of the first-year class comes from without the state. Not only is the distribution of physicians affected, but the quality of people entering the profession is influenced. Selections may have to be made on the basis of residence within a county in the state because of intrastate quotas. This means that the best qualified complement of students is not always obtained by a state.

In those states that are financially unable to support a medical school, participation in an interstate regional plan may be of great help. States that are financially able to support a medical school should be encouraged to develop them on a sound basis. I can appreciate the political reasons for these geographic restrictions, but I hope they can be reduced, if not abolished, in the not too distant future. Those institutions that are

still free to do so should give most careful consideration to applicants from areas poorly supplied by physicians. Likewise, every effort should be made to continue to improve the facilities for medical care in these areas.

The commission appropriately gave considerable attention to the problem of the "raw material"—students going into practice—because in the long run they are the people who, as they enter professional activities, will determine the quality of medical care.

Faculty Shortages

One effect of the financial plights of our medical schools results in our "inability to pay salaries adequate to attract and hold a sufficient number of highgrade teachers, with the result that many teaching positions are vacant and promising teachers are continually being lost." Two years ago, I⁴ attempted an analysis of this need for the basic medical sciences.

Diehl, West and Barclay⁵ concluded that: "At present mobilization levels, the impacts of the 'doctor-draft' law are not severe enough to seriously disrupt medical education," but there have been certain developments since that time to alert medical educators to potential dangers and possible deterioration. In a second paper,⁶ they presented current data gathered by the Office of Defense Mobilization and the Association of American Medical Colleges that show the wide variation in faculty-student ratios and in the teaching and research time per student in the nation's medical schools.

Our medical schools are the factories that will produce the medical profession for the civilian population and the military forces for years to come. There must be an over-all

appreciation of this. Our commission stated: "Protection of medical and dental school faculties is necessary in order that the continuing flow of graduates into the professions may be safeguarded."

In rewriting of Public Law No. 779, if it is to be continued, it must be modified so as to recognize (1) that our medical schools must have teachers who are specially trained for their respective fields, (2) that the maintenance of the residency program is essential for high quality medical education and service and (3) that there are many individuals who served in a civilian capacity during World War II in a most effective manner, not by their own choice but because they were declared essential by the Procurement and Assignment Service.

Although organized medicine has contributed greatly to medical education and has rendered generous support to this worthy cause through the American Medical Education Foundation, the fact remains that organized medicine has tended to make more difficult the recruiting of qualified people to the medical faculties. Recently the president of a county medical society made a plea for its members to contribute to a fund to aid young practicing physicians; one of the fund's purposes was to keep them from full-time service on medical college faculties. A number of deans with whom I have talked have complained about their inability to attract certain men because of restrictions placed upon geographic full-time by organized medicine. We recognize that income ceilings must be worked out and abuses prevented, but let us not expect our full-time faculty men to make financial sacrifices that will interfere with faculty recruitment.

I know of able men who have left academic life because of narrow interpretations of what constitutes a consultation practice. The commission has stated (Vol. I page 11): "However, many of us who take for granted the tremendous victories won by medical science against the deadliest killers of only a generation ago often overlook one crucial fact—all of these great advances would have been impossible without our modern system of education for physicians and other health personnel." If this system of education is to remain strong, it must command the most able faculty personnel. The medical profession stands to gain the most from this, and I make a plea for greater understanding between the medical schools and the medical profession.

In many of the discussions of our commission, increased responsibilities were suggested again and again for our medical schools. Many of these involved extension of medical service to the community. A typical example is illustrated in the following statement: "Regionalization in the health field means bringing together the health resources of an area and continuing their efforts for the delivery of better service. Really good care can emerge in a community only when there is organized cooperation among all those concerned—physicians, hospitals, health departments and (if the region has one) the medical school." Some of these plans involve sending staff members out for some distance from the medical school to conduct teaching exercises.

The community may make service demands on a medical school and center that are far greater than the teaching requirements and facilities, both staff and otherwise, for adequate handling. In addition, the need for

greater numbers of dentists, nurses and auxiliary or paramedical personnel in many areas creates additional demands upon the medical school and its faculty.

There was much discussion of the medical schools' function in meeting unfilled needs. One of the most common suggestions was to include more time in the curriculum for indoctrination for special fields, more lectures, separate departments for general practice, etc.

Medical School Finance

Sixty-six per cent of the \$180 million spent for medical research last year came from governmental sources. My comments here will be limited to the following paragraph: "Many project grants have adversely affected the financial structure of medical schools because these grants do not include sufficient funds to cover the direct administrative costs of the projects. Grants for the direct costs of research have resulted in more people and greater amounts of space devoted to research.

"To service these people and this space costs money—the indirect costs of research. It is estimated that these indirect costs range from 12 to 45 per cent of the research grant totals. This has led to the disturbing paradox of increased support for research draining an ever-increasing amount from the limited operating funds of the schools. Bleeding of the school's fluid funds dilutes medical education both financially and through overextending the capacity of its faculties. It is a problem urgently requiring corrective action by both governmental and private sponsors of research."

Backed with the federal tax dollar, the National Institutes have a staff of 750 full-time scientists and are

now making attractive offers to some of our most able young teachers to join a staff for the new Clinical Center. With the Armed Forces drafting them on one side and this constant drain to the Public Health Service and industry on the other, it is no wonder that medical school deans are about to the "end of the rope" and "ready for the river." It is a long road and some day the public will realize about the "goose that laid the golden egg."

All of these stresses emphasize the necessity for maintaining balance in our medical school programs. The dean must assume it as his responsibility to curb excesses, to see that the students get a fair break, to maintain service functions within bounds that can be paid for and are necessary, to stimulate and support research, but to keep it from assuming improper proportions in the total operations.

In some public supported institutions his role is a difficult one. Caught between the legislators, the various medical and health organizations, special associations, pressure and care groups, he and his faculty may not be able to determine the proper educational policy. We talk about possible control by the federal government, but many deans would prefer the kind of control the federal government has shown (and we do not want that) to some of the other groups mentioned above.

During the academic year 1951-52, the basic operating expenses of our medical schools totalled \$76 million. An additional \$34 million for medical research came from governmental agencies, private foundations and industry. The basic operating expense is just about double that of 10 years ago, and yet our commission was "alarmed at the progressively

Problems of Medical Education

severe financial situation of our medical education system which was found characterized by:

"1. Deterioration of the physical plant, with insufficient funds for needed modernization.

"2. Inability to pay salaries to attract and hold a sufficient number of high-grade teachers, with the result that many teaching positions are vacant and promising teachers continually are being lost.

"3. Inability to establish and build teaching programs in areas of recent progress such as psychiatry, rehabilitation, biophysics and the several aspects of preventive medicine.

"4. Inability to expand enrollment to meet the growing need, because such expansion without adequate financial means would lead to lower standards of professional education.

"5. Increasingly high tuition charges and the rising cost of living for students which, with inadequate scholarship funds, means that undertaking the study of medicine is increasingly more difficult for young people with limited financial resources. A similar problem is encountered in residency and other postgraduate training. This situation not only denies educational opportunity to many qualified candidates but, perhaps more important, endangers the future caliber of the profession by restricting the reservoir from which physicians may come.

"6. Reliance on research funds to support teaching personnel, so that the primary educational objective is threatened."

In our worries over the financial plight of our medical schools, we have great concern over the financial difficulties of our teaching hospitals, many of which are compensated inadequately for the services they render. The \$64 question is what can

be done about it? The Commission on Financing Higher Education has suggested some solutions.⁷

Many of us have tried to reduce overhead and to bring about economies. Tuition charges have risen in many instances just as far as they should go. We can try to get a greater return for our service contributions. We can reduce our activities. We can operate our medical schools from the return of group practice. Organized medicine and other groups have done everything in their power in some areas to prevent teaching services from collecting insurance fees for services rendered. Massachusetts General Hospital has been conducting a real attempt to get its just compensation from the Blue Shield program there. The teaching services on some of our hospitals in New York have been unable to solve the riddle under existing law.

Through the American Medical Foundation and the National Fund for Medical Education, some real advances have been made in private support. Our commission stated: "Although such private efforts as that of the National Fund for Medical Education and the American Medical Educational Foundation are to be heartily commended there is serious doubt as to whether they will be able to raise the big sums needed."

In his excellent review of "The Financial Status of Medical Education" prepared for the Executive Council of the Association of American Medical Colleges,⁸ Darley emphasized a point well expressed by the commission: that before enrollments could be increased in our medical colleges, "the basic structures of the existing schools and their educational programs must be properly strengthened through more adequate financing."

The commission recommended federal aid to health education. Most of you know of the role I played in endeavoring to secure a bipartisan bill for a similar purpose during the last few years. We thought we had all the safeguards in, but what happened to the fundamental purpose of the bill when the politicians started in on amendments is a matter of record.

You are all acquainted with the reduction in funds for the educational program of the Veterans Administration this past year. Where would we stop—osteopathic, chiropractic schools, schools for all types of auxiliary personnel? Why not have the federal government in all types of higher education?

I wrote a footnote, in which I stated: "While I can support federal aid for buildings and facilities and their rehabilitation for education in the health services along Hill-Burton lines, I have doubts about the advisability of federal aid in health education as recommended in this report with the possible exception to that in graduate schools of public health."

In looking ahead, top priority should be given to high quality of students and staff, highest standards in their performance and proper balance in our over-all programs. To attain this, adequate funds would be of great help. In our undergraduate programs, we should give greater emphasis to the significance of organization in the delivery of medical care, to the importance and need for comprehensive or continuing health care and to the social and psychological factors in health and disease.

Looking forward to the almost certain development of prepayment insurance for ambulant comprehensive care as well as for hospital care, we must continue to interest ourselves with the impact of this upon

our teaching material, both for undergraduates and graduates. In the report of the Committee on Graduate Training in Surgery of the Society of University Surgeons, Bricker, Gerbode, and Habif⁹ have dealt effectively with this problem.

In closing, I wish to make a strong plea for greater cooperation between our medical schools and teaching institutions and organized medicine in meeting the problems we have discussed here. If we pull our oars together, we can move forward. If not, many of us may end up bankrupt and in the hands of the government.

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Postgraduate Training Through a General Practice Residency

The future physician and his community benefit from the two-year general practice residency program offered at the University of Colorado.

CHARLEY J. SMYTH

IN 1948, the University of Colorado School of Medicine established a general practice residency training program and by so doing was one of the first medical schools to recognize and assume an educational responsibility in this field. A W. K. Kellogg Foundation grant made establishment of the program possible.

So that the part of this program involving the community hospitals and the practicing medical profession might succeed, a committee composed of two members each from the Colorado State Medical Society, the Colorado State Hospital Association and the University of Colorado was formed in 1946. The function of this committee was to serve as the liaison between the three groups to better coordinate existing facilities, and to establish minimal standards for the participating hospitals. Once these important preliminary steps were accomplished, this committee was dissolved.

Subsequently, the Committee on

Medical Education and Hospitals of the Colorado State Medical Society, together with the Office of Graduate Medical Education of the University of Colorado, suggested necessary improvements. This group then approved the community hospitals which participate in the training program. The committee also has helped in procuring of teaching teams which make monthly visits to the participating hospitals. The function of the school of medicine has been to supervise the educational phases of the entire program.

This program was based upon the premise that the survival of American medicine is dependent upon the preservation of the traditional family doctor. Prior to establishment of this general practice residency, most of the emphasis in graduate training was directed toward the specialist.

It was with a clear realization that this trend was contributing much to the impersonalization of medicine and to the disappearance of the general physician that this program was established. It was recognized that the far-reaching advances in scientific

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medicine were the results of specialists, and that thoroughly trained specialists always would be needed. It was equally apparent that there is still a need for general physicians interested in bringing these diverse special skills and knowledge together for the patient's benefit.

The undergraduate curriculum had been changed in 1947 with the chief aim of broadening the education of the medical student so that he would see in practice a type of medicine based on understanding the multiple factors which bear on human health and disease. These revisions in the curriculum were made for the purpose of attaining the primary aim of this state-supported medical school, which is to *educate physicians to undertake general practice in Colorado*. In most respects these changes have proved highly successful, but it has become increasingly evident that equally extensive changes are necessary at the graduate level (internships and residencies) if the young physician who intends to enter general practice is to receive a graded educational experience.

In most medical schools today, the student during his junior and senior years has served clinical clerkships. He has gained much practical knowledge on the wards, in the outpatient clinics and in the operating rooms. Because of these changes in the undergraduate curriculum, the medical graduate today has had clinical training that formerly was obtainable only by serving an internship. To extend the knowledge of the recent graduate who intends to undertake general practice, it is customary to take a general rotating internship. It is with regard to the educational value of the internship and other postgraduate assignments for the prospective general physician that

this report of the university program is concerned.

Original Program

As originally established, the general practice residency of three years was set up because it seemed apparent that such training would require the same period of intensive graduate education that is necessary in the specialty fields. This question of duration of training was the subject of considerable controversy among the original committee members because of the lack of precedent upon which to base an opinion. Desirable as it might be, in actual experience a three-year residency has proved too long for most students.

There has been and still is no acceptable definition of general practice, and there are limitations in setting up a training program until there is more agreement regarding this term. It is obviously impossible to make a man an expert in all branches of medicine. The Council on Medical Education and Hospitals of the American Medical Association recently defined the general practice residency as follows: "The period of training be of two years' duration beyond the internship," and further, "these residencies should be flexible, both as to extent and duration, depending upon the special needs of the individual and the community in which he intends to practice."

In designing a training program to comply with the needs of the individual and the community, it becomes evident that the physician who practices in a rural area must be able to handle the general needs of the community, often without immediate recourse to hospital and consultation. He must know medically something about every common illness. In urban practice, the field can be more lim-

ited. Here the special needs or desires of the individual physician become the principle concern in planning his postgraduate curriculum. The situation might be governed by the rights, privileges and limitations imposed by hospital regulations, and his self-imposed limitations to practice within his own qualifications.

Present Operating Plan

Much has been learned from experience gained in operating this residency during the past three years. Frequent conferences with individuals in the program have served to emphasize areas of interest and of concern. The following is a list of some of these points:

1. Limiting Factors for Seeking Training:

A. Most of these young men seek additional training because they feel insecure after a one-year internship. After the second year of the general practice residency, all of them reported that the training had given them exactly what they wanted. They have been asked their opinion on the most desirable length of time for such a residency, and with few exceptions they expressed the belief that two years beyond the internship is adequate. A common answer is that "additional time would be fine but I can't afford to spend any more."

B. One of the major limiting factors in seeking additional training is the limited stipend which the residents receive. They repeatedly point out that they are reluctant to spend extra time in training when they receive offers to enter practice paying from \$600 to \$800 per month for their services with only a one-year rotating internship. The majority of these men are married and do not want to assume additional debts if they elect to get more training.

2. Question of Demand for General Practice Residency: One of the questions raised when this general practice residency was being set up was whether there would be any demand and interest in this type of training. It was argued by some that the young doctor would be hesitant to enter general practice because he would feel that he always would have to assume a secondary role, for which he should have to apologize continuously.

From the time that this residency was first announced, there has been widespread interest in the program. There is ample evidence of increasing interest shown by the number of inquiries, particularly among the men now applying for internships at this medical center, because they have learned about the general practice training opportunities. Since its inauguration, it has been encouraging to witness the continued demand and to learn that other hospitals are planning or already have established similar residencies.

3. Content of the Residency: Much thought and time was spent originally in planning the content of this program. It is of considerable interest, therefore, to review the curriculum after three years of experience.

The area of most dispute was the question of surgical training. There were those who criticized the plan because it included one year of instruction in this special field, and some even contended that we were doing a disfavor to medical education by attempting to teach surgery to general practice residents. It is in this highly controversial field that more facts gained from a program such as this are so badly needed.

With few exceptions, the residents who have had this course of instruction have been particularly interested and unusually eager to get training in

surgery. They want to learn to perform the common surgical operations. In our interviews an attempt has been made to ascertain what type of surgical procedures they have done and what they intend to do when they enter practice. It is encouraging to us that these men have a keen appreciation of their capabilities and limitations. There undoubtedly will be instances where the men trained in this program will attempt operations for which they are not qualified.

It appears to us, however, that they appreciate what they can and cannot do. In their year on the surgical service, where they have had the same responsibilities given to the first-year surgical residents, they have learned much about the importance of proper pre- and postoperative care, surgical evaluation and diagnostic methods. Above all, the efforts to teach these general practice residents when the problem is too complicated for them seems to have made a deep impression.

Most of these residents during the period on surgery have developed some degree of skill in handling minor operative procedures, lacerations, acute fractures, shock, burns and electrolyte problems. They have had some experience in diagnosis and management of acute abdominal emergencies. At their own request the original content of the surgical year has been modified to include two months on the anesthesia service.

One deficiency in the present surgical training is the residents' lack of technical ability to repair perforated intestines or to perform segmental intestinal resections and anastomoses. Obviously, if they are to do emergency abdominal surgery, they occasionally will encounter a situation in which this knowledge and ability will be lifesaving. To correct this deficiency,

it is planned that each general practice resident who elects to take the year of surgery will have a well-supervised course of animal surgery during which he will be taught to perform these operative procedures.

In Colorado, rural general practitioners must do surgery and most of them will do so after a one-year internship. It is the purpose of this residency to give some technical training and instill in the future general practitioner a sense of his limitations and his capabilities. As community hospitals grow, they will attract trained surgeons and fewer general physicians will need to do surgery.

4. Opportunity for Master of Science Degree in General Practice: When the clinical graduate division was organized at this university, each resident in the teaching hospitals was designated a clinical graduate student and required to register in the graduate school. Graduate courses were listed in the graduate school catalogue with definite educational goals set for each service, and credit was recorded for each service completed. Minor credit could be obtained by a specially designed course in "Applied Medical Science." In this way, the graduate training of all specialty and general practice residents was formalized and, if the student desired, he could become a candidate for an advanced degree by meeting the thesis requirements and passing the necessary examinations (that is, M. S. in surgery; M. S. in medicine; M. S. in general practice, etc.).

The general practice residents have not shown much interest in this degree program. The few who tried have failed to pass the examinations. At present we are not encouraging these residents to write a thesis. They have repeatedly told us that they do not want to take the necessary time

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from their training to accomplish a piece of meritorious research which, if published, would be acceptable as a master's thesis.

We shall continue to offer each general practice resident the opportunity to obtain a Master of Science degree.

5. Training More Physicians for Rural Practice: One of the major objectives in setting up this residency was to provide more physicians who would want to establish their practice in smaller communities. After three years, in many instances we are beginning to see the attainment of this aim. More than half of the trainees have settled in rural areas in this state upon completion of their residency. Furthermore, the group who will complete their training this year are seeking openings in rural communities in the Rocky Mountain area. This is all the more remarkable in view of the large number of men from this group who are entering military service.

6. Rural Hospital Training: One of the unique features of this program is the requirement that each resident be assigned for a three- or four-month period to one of the approved community hospitals in Colorado.* Insofar as possible, this period of training has been made a mixed practice experience in the fields of medicine, surgery, pediatrics, and obstetrics and gynecology.

This experience has proved to be a valuable part of the training. The residents have learned many of the administrative problems of small hospitals. One particularly valuable lesson has been to see how the general practitioner uses the laboratory facilities, and what laboratory procedures can and cannot be ordered because of their availability and cost. This, the

young physicians find, is a factor of major importance and one which they had not appreciated in the large charity hospital where there are few such restrictions.

It has been observed that whenever residents have been assigned to the rural hospital, they usually object and occasionally resist strongly. There exists among the group the feeling that this time could be better spent in one of the medical center hospitals. Because this assignment is essential to the training program, each resident has been required to accept this assignment.

On completion of the assignment, each of the eight residents who have had this rural hospital service has said that he considers it one of the most valuable periods of his training. Without exception, the residents have expressed enthusiasm for the interest which the hospital staff has shown in teaching them and in giving them responsibilities in the care of their private cases.

Being the only house physician, there is no competition for the privilege of assisting in a variety of common procedures and operations. Each has been granted considerable freedom in the management of county patients admitted to the hospital. This service has given these residents a rich surgical experience, which has been an important supplement to the training obtained at the medical center hospitals.

It has been gratifying to learn that the hospital staff has welcomed these men to assist and work with them, and it is realized that this relationship would not exist if the young physicians were in direct competition. Staff members have commented repeatedly that the presence of a recent graduate working in their hospital has been an excellent stimulus to the

*Laramie County Hospital, Fort Collins, Colorado, is the only one participating to date.

older men to keep up with recent advances in medical practice.

For one entire day each month, two members of the faculty of the university conduct teaching ward rounds and conferences for the benefit of the resident and the hospital staff. These days are looked upon with great favor and serve to keep a close working relationship between the local practitioners who are carrying out the program and the medical school. The doctors think so highly of this phase of the teaching program that they now have taken over the total financial load of the monthly teaching teams.

The success of this rural hospital program is a tribute to the untiring efforts of a unified staff, each member of which is a general practitioner convinced by experience that the majority of illness can be adequately and most economically managed by a general physician. It has meant much to the young physician, who has chosen to spend his professional life as a family doctor, to have worked with a staff who have a firm conviction in the basic philosophy that there is and will continue to be a need for a general physician.

7. Medical School Faculty and General Practice Residency: The impact of this general practice residency program on the medical school faculty members has been important. It has evoked more serious discussion of basic problems in medical education than any other of a number of significant recent developments at the school. It is a singular accomplishment to have a group of "specialists" who constitute this faculty pool their thoughts and create, by their willingness to integrate their teaching, a workable program in training at the postgraduate level. Misunderstandings have arisen, but their democratic

solution in light of the common educational objectives has renewed our strength so that we plan extensions of the program.

ONE OF THE most far-reaching influences of this program may prove to be that the faculty has been able to demonstrate that there is still a need for general physicians who know their limitations, who are competent and willing to recognize when a specialist is needed and who can intelligently direct their patients to the proper specialist. By this leadership, the teachers of medicine may be able to restore the general practitioner to the enviable position which he once held.

Such programs as the one which forms the basis of this report will enhance the dignity and improve the status of the young physician who elects to practice comprehensive medicine. It is certain that such a satisfactory status can be maintained only when that physician continues to attend scientific medical meetings and is willing to supplement this by keeping up with the current literature. The faith of the average citizen in the ability of the family doctor can be restored by an effective educational program.

Proposed Changes

It was recognized at the start that actual experience with the plan undoubtedly would result in its modification. The reactions of the participating residents and the opinions of the participating hospitals, together with the conferences with the heads of the clinical departments responsible for this program, have been considered and certain revisions based upon these experiences will be made.

One important development, which will offer greater opportunities in the

training of the "family physician" type of practitioners, is establishment of a general medical clinic at the Denver General Hospital. This clinic will provide facilities and equipment simulating as nearly as possible those available in the office of a practicing physician. The chief activity and interest of the clinic will center around an outpatient department so organized as to unite internal medicine, pediatrics, obstetrics, psychiatry, public health and preventive medicine, needed specialty consultative services, ancillary services, particularly nursing and social service, into an effort that will provide for the total care of the patients. The activities and interests of the clinic will extend into the hospital or the home, according to the best interests of the patients.

This clinic will be staffed with a nucleus of full-time instructors, including at least one qualified pediatrician, internist, surgeon and psychiatrist. General practice residents, interns and junior and senior medical students will be assigned to the clinic. In this setting, the resident can learn the intelligent use of specialists under the supervision of a staff of full-time faculty especially selected for their interest and competence in providing total medical care of the individual. An attempt will be made to develop the same relationship between the general clinic and the specialty services that should exist between the general physician and the specialist.

The junior and senior medical students will be assigned to the clinic throughout a two-year period. Under supervision they will be given patient responsibility, and will have an opportunity to follow patients both into the hospital or into the home, depending upon the needs of the patient.

By breaking down the traditional barrier between outpatient and ward service assignments, and by extending the clinic responsibility into the patient's home and community, the general practice residents will develop an intimate knowledge of the patient over a long period of time. As far as possible, each resident will see new patients and follow up visits of old patients on an appointment basis.

In this way, the important doctor-patient relationship will be preserved and the patients will have an increased sense of security and peace of mind. In such a framework, it should be possible to teach more of the art of medicine to the young physician and also to pass on to him a deeper appreciation of the social as well as the scientific aspects of medical care. The original three-year curriculum is being modified to give each general practice resident assignments in this general clinic.

It is required that candidates for residency training in general practice be graduates of schools of medicine approved by the Council on Medical Education and Hospitals of the American Medical Association. They also must have completed an approved internship of one year's duration. Credit will be allowed for time spent in previous residency training and for previous experience in active practice of medicine and surgery.

Curriculum

To meet the needs of two types of trainees, the period of training for the general practice residents has been divided into two-year program (Plan I) and a three-year program (Plan II).

PLAN I: This course is intended for the young physician who wishes to practice in a large community or as a member of a group in which he will

not be performing major surgery. In this situation, qualified surgical specialists are available and his training requirements are limited to pediatrics, internal medicine, obstetrics, anesthesia, and psychiatry.

For the first nine months of the first year, the resident will be assigned to the general clinic. Each resident will be responsible for the original history and physical examination, and the subsequent diagnostic and therapeutic procedures. His work will be supervised by a clinic staff member.

In this teaching relationship, the total needs of the patient will be considered. Emergency cases will be a part of the responsibility of the general practice residents. If consultation, special clinic care or hospitalization is indicated, the decision will be approved by a supervisor. Patients who require special clinic or hospital care will be scheduled to return to the same resident if follow-up clinic visits are necessary.

In the setting of this general clinic, it will be possible to instruct the physician in the functions and utilization of such ancillary services as social service, general nursing care, rehabilitation, mental hygiene and such community resources as public health nursing, maternal and child welfare, communicable disease control, venereal disease control and tuberculosis control.

Following the general clinic assignment, every resident will be assigned to ward services in internal medicine, pediatrics, obstetrics, anesthesia, and to a community hospital for varying periods:

Internal Medicine—six months. During this period the resident will be assigned to the wards of Denver General Hospital. His duties, assignments and training will be similar to that of the assistant resident in in-

ternal medicine, and will include experience in ward management, diagnosis and therapeutics. Attendance at conferences, seminars and lectures regularly scheduled by the department of medicine and other adjunct services will be expected.

Pediatrics—three months. This period will be spent in the pediatric division of Colorado General and Denver General hospitals. The resident will be assigned according to the wishes of the head of the department of pediatrics, and will receive both ward and outpatient experience. Instruction in communicable diseases, care of the newborn and problems of nutrition will be emphasized.

Obstetrics and Anesthesia—three months. This time will be devoted to intensive training in obstetrics and anesthesia in the delivery rooms and wards and in the operating rooms. The resident will receive training in pre- and postnatal care. In addition, he will be taught how to manage the complications of pregnancy and obstetrical emergencies, and will become acquainted with obstetrical operative procedures.

Throughout the periods of these ward service assignments, the resident would spend three half-days each week in the general medical clinic in order to follow selected patients for whom he has been responsible during his first year's residency.

At sometime during the first two years, each resident will be assigned to an affiliated small community hospital for a four-month period.

PLAN II: The second plan is designed to meet the need of the general physician who intends to enter general practice in a rural community, or to do solo practice in a large community and, therefore, must be trained in certain aspects of surgery.

Following completion of the two

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GENERAL PRACTICE RESIDENCY

First Year	GENERAL MEDICAL CLINIC—9 months Teaching Conference 8-9 A.M. Home Visits 4-5 P.M.		PEDIATRICS 3 months
			GENERAL MEDICAL CLINIC 2 or 3 times per week
Second Year	INTERNAL MEDICINE— 6 months	OBSTETRICS and ANESTHESIA— 3 months	RURAL HOSPITAL 3 months
	GENERAL MEDICAL CLINIC—2 or 3 half-days per week all year, except on rural hospital assignment.		
Elective Third Year	This third year is elective and is designed to meet the individual needs of the applicant. Training will be offered in the following major departments: surgery and the surgical specialties; internal medicine; pediatrics; obstetrics and gynecology; physical medicine and rehabilitation; psychiatry and psychosomatic medicine. Listed below are examples of programs giving additional training in surgery and in medicine.		

EXAMPLE SCHEDULES FOR ELECTIVE THIRD YEAR

Third Year in Surgery*	ORTHOPEDIC SURGERY— 2 months	GYNECOLOGY 2 months	G.U. and E.N.T.— 2 months	GENERAL SURGERY 6 months
	GENERAL MEDICAL CLINIC—2 or 3 half-days per week all year.			
	*Throughout this year, weekly sessions on surgical technique will be offered in the animal laboratory of the department of surgery.			

Third Year in Medicine	PSYCHIATRY and PSYCHOSOMATIC MEDICINE—3 months	PEDIATRICS 3 months	INTERNAL MEDICINE— 6 months
	GENERAL MEDICAL CLINIC—2 or 3 half-days per week all year.		

years' training outlined in Plan I, the resident may elect to take one year of intensive training in surgery. This will include assignments on the following services: ear, nose and throat, gynecology, urology, orthopedic and general surgery. Throughout this year there will be weekly periods of instruction on surgical technique in the animal laboratory. This training will be designed to stress surgical techniques which might be required in acute surgical emergencies.

Each resident serving this third year will continue his assignment in the general clinic for two or three half-days each week throughout the year. If a resident elects, he may spend a third year divided among the

medical, pediatric, obstetric and psychiatric services.

The attached schedules indicate the proposed changes and include two examples of elective third-year assignments.

There will be a transition period during which the general clinic is being established. This will require changes in the record system, physical structures and the accumulation of qualified professional staff. The proposed schedules will probably require adjustments to fit the developments. The general clinic was opened for patients on May 25, 1953, and the first students will be assigned to this clinic on June 16, 1953.

Individual and Community Health Instruction in the Premedical Curriculum

A course that orients students in the field of health and sciences is needed as a stepping stone between the liberal arts college and the medical school.

WILLIAM W. STILES, FRANCIS SCOTT SMYTH, MATHEA REUTER

WHAT IS WRONG with the premedical curriculum? This perennial question, which perplexes both medical educators and students, needs frequent review. At present, one of the greatest needs seems to be some way of introducing and over-viewing the entire field of health and medical science in order to reveal the existing relationships between preclinical and clinical studies and the practice of medicine itself. In particular, the social or community aspects of disease seem to deserve consideration.⁵

We should like to describe an orientation course for premedical students which, in our experience, fulfills these needs and serves as a stepping stone between the liberal arts college and medical school.

The need for such a course at the premedical level is being expressed repeatedly by medical educators. For example, a recent digest of 196 articles indicates that there are three much needed reforms in medical education:¹⁰

1. Constant attention to the major aim (coordination, correlation and integration of the curriculum).

2. Association of medical and health problems with a social philosophy.

3. More attention to, and interest in, public and community health.

Current interest in the teaching of the social and environmental factors in the undergraduate medical curriculum can be traced directly to a basic humanistic approach—that concern for all the health needs of human beings which has always characterized the true physician. The new constitution of the Association of American Medical Colleges places emphasis on the prevention of disease and the promotion of health as one of the major functions of the physician, along with the older concept of the physician as a diagnostician and an expert in treatment.²

The need for premedical curricular reforms is also stressed by the changing course requirements for admission to medical school. Until recently, prerequisites were generally limited to chemistry, physics, biology, mathematics and English. Now 11 of the 79 recognized medical schools in the United States require one or more

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of the social sciences, and 44 others list the social sciences among their recommended electives.

Further evidence of the need for more consideration of the social sciences in the premedical curriculum is presented by Vaughn.¹¹ His report of the graduate record examination indicated that a representative group of premedical students was well above the average in all scientific subjects (mathematics, physics, chemistry and the biological sciences), but somewhat below in the so-called socio-humanistic subjects. It is significant, too, that the premedical students' superiority in science, compared to the first year graduate level, was far less than their inferiority in social studies, literature and fine arts.

Objectives of Course

Our interpretation of the objectives that should be incorporated in an orientation course of health and medical science for premedical students may be enumerated as follows:

1. The primary objective should be the most altruistic of motives: the prevention of disease. Preventive medicine, as a part of the premedical curriculum, might well be considered with the dictum of Sir Arthur Newsholme that "it should pervade the entire curriculum." Unfortunately, teaching the principles of health maintenance must still be approached with the missionary spirit, for general interest in it continues to lag.

2. The student should become acquainted with every possible aspect of medicine, with emphasis on the epidemiological approach to disease control, thus concentrating on breaking the weakest link in the chain of events which perpetuates infections.

3. Students should be given the necessary information and motivation that will improve their personal

hygiene, and also will assist and extend the activities of health agencies to improve general sanitation and public health. A sense of responsibility should be developed for participating in the communal control of diseases by actively associating with official and voluntary health agencies, and by voting intelligently on health issues.

4. Because of the threat of natural and war-caused disasters, everyone should learn the fundamentals of emergency medical treatment and field sanitation. Premedical students, in particular, should learn these fundamentals and actively participate in local civil defense organizations, volunteering for subordinate places in first aid stations and public health teams.

5. The student should be led away from self-diagnosis and self-treatment. He should be made aware of reliable and dependable sources of medical information; aware of the necessity to evaluate and interpret current advertising and literature critically; to avoid fake cures, nostrums and charlatans and to seek competent medical services for himself and his family.

6. An introduction to anatomy, physiology, bacteriology, pathology, biochemistry and other subjects ordinarily studied in the preclinical years should be included. The clinical fields of medicine, including surgery, pediatrics, obstetrics, gynecology, psychiatry, internal medicine and other specialties should be discussed, with the goal of integration of these subjects clearly in mind.

7. The premedical student should be introduced to other careers in the health field, making him familiar with the contributions of dentists, veterinarians, nurses, pharmacists, physical therapists, occupational ther-

apists, hospital administrators, sanitarians, engineers, laboratory technicians, biostatisticians and a host of others concerned with the welfare of mankind.

8. General college students who select a vocation other than a health science still should find the course of definite practical value.

9. The course should be organized and administered soundly from an educational point of view.

Outline of Course

The major objectives mentioned above seem to be fulfilled in the following outline of a course of study.*

This course might be entitled "Individual and Community Health," a simple, generally acceptable title which avoids the word "hygiene" with its unfavorable connotations. The subject matter may be divided into 17 major sections, and in turn subdivided into 87 topics, each of which would represent a day's class assignment.

INDIVIDUAL AND COMMUNITY HEALTH

- I. An Introduction to Individual and Community Health
 1. The need to control disease
- II. Accidents and Violence
 2. Importance of accidents and violence
 3. Hemorrhage and shock
 4. Asphyxiation and resuscitation
 5. Bone injuries and transportation of the wounded
 6. Prevention of traffic accidents
 7. Prevention of home accidents
- III. Wound Infections
 8. Soft-tissue injuries
 9. Living agents of disease
 10. Disinfectants and disinfection
 11. Specific wound infections
- IV. Contact and Air-borne Diseases

12. General nature of contact and air-borne diseases
13. Viral infections: "colds," influenza, infantile paralysis
14. Viral infections: measles, mumps, chickenpox
15. Viral infections: smallpox
16. Bacterial infections: diphtheria, whooping cough, meningitis
17. Bacterial infections caused by streptococci
18. Bacterial infections caused by pneumococci, pneumonias and other disorders of the respiratory system
19. Bacterial infections: tuberculosis, leprosy
20. Fungus infections: superficial and systemic mycoses

- V. General Measures of Disease Control
 21. Sources and transfer of infections
 22. Resistance and immunity
 23. Allergies

- VI. Disorders of Nutrition, Digestion and Metabolism
 24. Problems of nutrition
 25. Nutritional disorders associated with carbohydrates, fats, proteins and minerals
 26. Nutritional disorders associated with vitamins
 27. Selection of an optimal diet
 28. Disorders of the digestive system
 29. Metabolic disorders

- VII. Food Sanitation
 30. Food poisonings
 31. Food processing and preservation
 32. Food preparation
 33. Food wastes, nuisances

- VIII. Fecal-borne Diseases
 34. Bacterial infections: typhoid, paratyphoid, salmonellosis
 35. Bacterial infections: bacillary dysentery (shigellosis), cholera
 36. Viral infections: infectious hepatitis and others
 37. Protozoal infections: amebiasis and others
 38. Helminthic infections caused by roundworms (nematodes)
 39. Helminthic infections caused by tapeworms (cestodes) and flukes (trematodes)

- IX. Water, Sewage and Flies
 40. Public water supplies
 41. Personal utilization of water
 42. Disposal of fecal excrement
 43. Flies

- X. Insect- and Arthropod-borne Diseases

*This outline has been developed by one of us (W.W.S.) into a mimeographed syllabus for the students' use. It is now available as a complete textbook.

- 44. Mosquito-borne diseases: malaria
- 45. Mosquito-borne diseases: yellow fever, dengue, encephalitides, filariasis
- 46. Mosquitoes and their control
- 47. Gnats and certain other insect vectors of disease
- 48. Louse-borne diseases
- 49. Flea-borne diseases
- 50. Mite- and tick-borne diseases
- 51. Other arthropods of medical importance
- 52. Insecticides, fumigants and repellents
- XI. Animal-borne Diseases
 - 53. Rodent-borne diseases
 - 54. Rodents and their control
 - 55. Animal-borne diseases caused by viruses and rickettsia
 - 56. Animal-borne diseases caused by other organisms
 - 57. Some harmful animals
- XII. Environmental and Occupational Diseases
 - 58. Heat and cold
 - 59. Poisonous gases
 - 60. Injurious vapors and dusts
 - 61. Injurious liquids and solids
 - 62. Miscellaneous occupational injuries
 - 63. Medical aspects of electrical energy
 - 64. Workmen's compensation and rehabilitation
- XIII. Socio-Sexual Problems
 - 65. Socio-sexual problems of young adults
 - 66. Venereal diseases
 - 67. Control of venereal diseases
 - 68. Family and marital problems
 - 69. Genetics and heredity
- XIV. Maternal and Child Care
 - 70. Pregnancy
 - 71. Childbirth
 - 72. Infant care
 - 73. The preschool child
 - 74. School-age health problems
 - 75. Dental care
- XV. Disorders of the Nervous System
 - 76. Disorders of the special senses
 - 77. Recognition of nervous system disorders
 - 78. Organic disorders of the nervous system
 - 79. Drugs affecting the nervous system
 - 80. Mental disorders
- XVI. Problems Relating to Medical Care
 - 81. Problems of later life
 - 82. Cancers
 - 83. Medical economics
 - 84. Public health agencies
 - 85. The bookkeeping of humanity
- XVII. The Challenge to Control Disease
 - 86. Careers in the health sciences
 - 87. Advances in the health sciences

Because interest and motivation are of prime importance in the learning process, it is advantageous to begin with the study of emergency medical care, a topic of universal appeal and obvious practical value. Furthermore, it is a dramatic subject akin to the practice of surgery, which seems to be the aspiration of many premedical students.

The choice of topics contained in the course and the relative amount of time devoted to each will depend upon a number of factors. These include: (1) previous training and experience of the students, (2) authentic health information readily available from popular writings and other sources, (3) relative importance of the disease under consideration both in terms of existing and potential mortality and morbidity, (4) usefulness of the information as it relates to disease prevention and control, and (5) current interests and motives of the students. Because no formula which includes all of these variables has been devised to yield a precise answer about the proportion of time and space to be allotted to each topic, it is necessary to temper the outline with personal judgment.

Concepts of Outline

In preparing this outline, it seemed of fundamental importance to begin with a simple biological concept and proceed to one more involved. Hence we began with only one biological variable—man himself—and related it to the comparatively simple physical factors in the environment which cause injury.

Next, two biological variables—the host and parasite—are introduced with a discussion of wound infections and carried through the discussion of contact and air-borne diseases. This soon becomes complicated by other biological variables—the intermediate hosts involved in certain of the worm infections. Three or more biological variables are also involved in discussing the insect-borne and animal-borne diseases.

Along with development of these biological concepts, there is an evolution of certain sociologic concepts. One begins with a consideration of the individual. A premedical student is naturally most interested in himself and so is apt to relate the problem of accidents almost exclusively to his own person. It is possible, however, to begin the transition from "personal hygiene" to "public health" by mentioning the familiar agencies in one's own community concerned with accident prevention.

In discussing the contact and air-borne diseases, the student is still most interested in himself and may even "suffer" the symptoms of every disease he studies. But he soon realizes that his own infections must come from someone else, and he develops a somewhat greater interest in his fellowmen. This, too, is a transition from "personal hygiene" to "public health." The concept can be elaborated in discussing nutrition, by pointing out the mounting problems of inadequate food supplies and overpopulation throughout the world.

Extension of the "public health" concept from the immediate environment to the world as a whole is made possible by a discussion of fecal-borne, insect-borne and animal-borne diseases—many of which ordinarily are considered as exotic diseases. Nevertheless, the student is made to

realize that in this day of rapid transportation and communications, the afflictions of those in remote areas may affect the people of this country.

Specific sociologic problems are presented through discussing the attempts made to control the diseases under consideration. Both social and economic factors are brought into focus by considering diseases and injuries attributed to the extremes of heat and cold in the environment in which we work and live, by discussing illness of occupational origin and those caused by war.

Consideration of industrial medicine and workman's compensation directs attention to important social reforms. These are also part and parcel of the consideration of socio-sexual problems, maternal and child care, mental hygiene and the overall problems of medical care. Bits of "personal hygiene" are an integral part of each of these topics. The emphasis on "public health," however, reaches a climax in discussing the administrative problems of medical care and disease control.

From the premedical student's standpoint, a most important sociologic and economic problem is that of his own career. This is reason enough to discuss the various vocational opportunities in the health field. When 7,000 students are admitted to the medical schools in this country annually and, at the same time, between 15,000 and 20,000 premedical students are coming to college campuses, it is apparent that there are many disappointed and frustrated would-be medical students. They may yet be made happy and satisfied if they are redirected into another of the many careers in the health field. A course of this kind can be of great service in helping to determine students' aptitudes for

medicine and to recruit and redirect some of them to a more suitable field.

Regardless of the vocation the student may choose for himself, it is imperative that this course be of immediate practical value to him. A glance at the contents of this outline reveals that nearly every topic under consideration is a vital part of everyday living.

Problems of Administration

Administration of this course in the classroom presents several problems. As with other courses, it is imperative to have a proper introduction and a fitting conclusion. This fulfills the educational dictum often stated: "Tell them what you're about to tell them, then tell them, and finally tell them what you've told them." Here the introduction is the first chapter, "The Need to Control Disease." The conclusion consists of the last two chapters which represent Section XVII, "The Challenge to Control Disease."

This course is suggested as a one-year, six-unit subject. Presentation of the body of factual material must conform to an established schedule, with fixed dates that mark the beginning, midpoint and end of each semester. This material has been organized so that it may be adapted to either a two-semester or a three-quarter curriculum:

For a Two-Semester Curriculum:

First semester—topics 1-43

First half—topics 1-23

Second half—topics 24-43

Second semester—topics 44-87

First half—topics 44-64

Second half—topics 65-87

For a Three-Quarter Curriculum:

First quarter—topics 1-29

First half—topics 1-15

Second half—topics 16-29

Second quarter—topics 30-57

First half—topics 30-43

Second half—topics 44-57

Third quarter—topics 58-87

First half—topics 58-72

Second half—topics 73-87

Although each unit of instruction should be complete in itself, there also should be a distinct transition from one to another. Likewise, each day's assignment should conform to a well-defined pattern and relate to assignments of the previous and the following day. An effort has been made to consider each topic of the course in a logical sequence and to relate each successive topic to its predecessor.

Possibly the most difficult problem for the beginning student of a health science is to develop an adequate vocabulary of technical terms. This is also a problem for the teacher. Great care should be exercised in choosing technical and semitechnical words so as to include only the most useful. Each word should be defined adequately when it is first introduced; it may be valuable to include its derivation. Re-using the word in its proper connotation will then help the student to make the word a part of his own vocabulary.

There may be some controversy about the level of instruction. No doubt the material should be started at a level which is understood readily by the average college student, and it should progress to higher levels. But just how far should the sights be set? Should all of the material be within the reach of the average student as he progresses at the normal rate, or should the level be elevated more rapidly so that even the best student will be challenged? We are of the opinion that the level should be stiffened to the extent that no one is left with the impression that he "knows it all." We believe this will help the student gain some of the humility and modesty that mark the truly great physician.

Who Should Teach?

Having established these criteria for a course in health science, it is reasonable to ask who should do the teaching. Unfortunately, very few are sufficiently interested and prepared to give such classroom instruction at the present time. There are many who might qualify, however, if they would seek additional training for themselves and enlist the cooperation of those qualified to cover selected topics.

Here is the opportunity for a more intimate acquaintance between liberal arts professors and members of medical faculties. At no time since premedical training was introduced has there been any significant degree of cooperation between these two groups, but there is no reason why this deficiency should continue. Both groups must assume responsibility for the present situation.

The professor of preventive medicine and public health in the medical school is in a unique position to help. Representatives of the local health department and other official and voluntary agencies generally are willing and capable of giving aid. Regardless of the participants, it is imperative that one person be responsible for the leadership and integration of the course.

At the University of California, an orientation course in "Individual and Community Health," of the kind described above, has been given for the past five years. It is an outgrowth of an elementary public health course given in one form or another for more than half a century. The present course is not limited to premedical students, but is a service course without prerequisites, offered by the faculty of the school of public health to both lower and upper division undergraduate students in all

departments of the university. Approximately 700 students are enrolled each semester. Their evaluation of the course, plus our own, has convinced us that such a project is worthwhile for all college students, and especially valuable for premedical students.

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Psychiatric Teaching on an Inpatient Medical Service

An experimental program at the University of Minnesota integrates psychiatric and medical teaching.

C. KNIGHT ALDRICH

THE DEVELOPMENT OF psychiatric teaching in undergraduate medical education has been marked by several periodic shifts of emphasis. Until World War I psychiatry was somewhat isolated from the rest of medical teaching and was looked upon with a degree of suspicion by other specialties. Psychiatric teaching usually was a subdepartment, swallowed up among its better established associates.

The beginnings of a fight for recognition and an accompanying need to break away from control by other departments began during the first World War. This produced a somewhat defensive effort at autonomy. Gradually, as psychiatry overcame some of its own insecurity, there was a return to liaison with other departments, but this time as a participating, interrelating specialty.

Various approaches toward establishment of this liaison have been made. These include: a separate psychosomatic division with the eventual goal of greater integration of the whole curriculum; a psychosomatic

subdivision of the department of medicine with graduate teaching as the major focus; undergraduate teaching often involving a small group of the total number of students; and, as Fox¹ has reported at Harvard, conferences with small groups and individuals while on the service in internal medicine. In most of these, emphasis is on specifically referred patients in whom an emotional factor already is recognized rather than on an unselected group of patients.

The Minnesota Program

The following paragraphs describe an experimental approach to the teaching of psychiatry in the department of medicine carried out at the University of Minnesota since 1949.

At Minnesota there is a 10-week junior clerkship in psychiatry and neurology with both in- and outpatient teaching, a lecture a week of psychiatric teaching with a strong psychosomatic accent throughout the freshman and sophomore years, and teaching psychiatric principles in the department of pediatrics.

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In spite of a consistent emphasis on integration, there remains a cleavage between psychiatry and the rest of medicine as evidenced by the statement of students: "Shall I take a psychiatric or medical history?"; and the tendency to refer all emotional aspects of a patient's problem to a psychiatrist as out of the province of a general physician. This is not peculiar to psychiatry and is, perhaps, a problem to be anticipated in any school where all faculty members are specialists and all patients are seen in a hospital milieu.

In an effort to counteract this tendency toward isolation of psychiatry, the present experimental program was set up with the aid of National Mental Health Act funds. Its objectives are: first, to integrate psychiatry with other medical specialties to a greater degree; and second, to help students see how psychiatry can fit into general practice. We believe that this program is a step toward the goal, recommended by the Group for Advancement of Psychiatry,² that three-quarters of the clinical time in psychiatry be given to emotional problems common in general practice.

To make the best use of the small amount of time available in the already crowded junior University Hospitals' clerkship in internal medicine, the program was started along the lines of Dr. Fox's work at Peter Bent Brigham Hospital, and groups of two or more students were seen once a week in the office for discussions of the patients assigned to them on the medical wards. The instructor functioned primarily as a catalyst for discussion, and plenty of opportunity was given for the students to handle each other's reluctance to face the emotional factors in their patients' problems.

No effort was made to cover designated material, but to handle whatever came up spontaneously. As in a previous short course in psychotherapeutic medicine for general practitioners,³ it was found that a random selection of patients was provocative of more meaningful discussion than a selection of patients hand-picked to illustrate various typical problems. Selection fosters the feeling on the part of students that emotional factors are significantly present in a certain number of patients, but are of negligible importance in the rest.

Discussion Subjects

In the first year, students met once a week for five weeks in groups of two or three; in the second year, groups of five met twice a week for five weeks. An account was kept of the major subjects discussed in the conferences of the first two years, although it is recognized that considerable overlap occurred and statistics are approximate.

1. *Organic illnesses.* About 21 per cent of the time was spent in discussing the emotional aspects of specific organic illnesses. Included in this group are such problems as what to tell a patient and his relatives when his prognosis is poor, and how depression in such patients may be prevented or handled.

The meaning of sudden enforced retirement, as in the patient with coronary thrombosis, was explored frequently as was the contribution of emotional factors to difficulties in the management of chronic disturbances such as diabetes and tuberculosis. The remainder of this portion of time was divided among many specific problems such as blindness, deafness, amputations and venereal disease.

2. *Psychosomatic disturbances.* Discussion of these disturbances occu-

pied about 19 per cent of the available time. The instructor attempted to keep the focus less on controversial theoretical considerations than on experimental evidence and observations on the students' patients.

Of this group, the problems associated with obesity seemed to lend themselves most readily to teaching purposes, as the student easily comes to recognize that the psychological and emotional aspects of the control of appetite are the major problems with which the physician has to deal. Consideration was also given frequently to peptic ulcer, hypertension, bronchial asthma, ulcerative colitis, thyrotoxicosis and migraine.

3. *The doctor-patient relationship.* Sixteen per cent of the time was given to problems of the relationship between doctor and patient. Lectures in the sophomore year emphasized these problems, but the students require re-emphasis at the time they are seeing patients.

Although the psychiatric outpatient department plays the major role in this re-emphasis, supplementary and integrative material was covered in the program on the medical service with reference to the doctor's own feelings toward patients of varying personalities and peculiarities; the handling of anger, righteous and otherwise, in both patient and doctor; dealing with relatives; setting fees, and other emotionally charged aspects of a doctor's practice. Many students use this opportunity to discuss their own feelings of inadequacy and fear of patients and to discover that their significance to their patients is not necessarily proportionate to their position in the hospital hierarchy.

4. *Specific emotional disturbances encountered in general practice.* Psychiatric teaching demonstrates the

methods psychiatrists use to handle emotional illness, but it frequently leaves the general practitioner somewhat in doubt as to the practical steps he can take when confronted with such problems. Consequently, 13 per cent of teaching time was given to the management in general practice of deliria, alcoholism, mild depressions and grief, drug addiction, senility and hypochondriasis, particularly when these are secondary problems associated with other illnesses.

5. *Dynamics.* Although psychodynamics also are dealt with extensively in courses in psychiatry, it often comes as a surprise to the student to see their application in patients without specifically labeled psychiatric disturbances. Much of the 12 per cent of time given to dynamics was spent in discussing dependency as it appears on a medical ward, and the relationship of hostility to dependency. The defenses against anxiety in general, but in particular the mechanisms of denial and regression, also were dealt with, as was the function of secondary gains.

6. *Psychotherapy.* Approximately 8 per cent of the time was given to amplification of material presented in the psychiatric clerkship concerning the means of handling emotional problems by the general practitioner. Emphasis was placed first on the importance of a sound, positive diagnosis; second, on the degree to which such measures as psychological support, environmental modification and clarification can be effectively used by a physician without specialized training; and, finally, on such specific problems as the use of barbiturates. The selection of patients for referral to psychiatrists and techniques the physician can use to facilitate such referrals frequently could be illus-

trated by examples from the students' patients.

7. *Miscellaneous.* The remaining 11 per cent of time was distributed among miscellaneous subjects with perhaps the greatest emphasis on the physician's use of community resources; his role in the community, particularly with respect to the problems of geriatrics; and the relationship of general practitioner and specialist. Particular problems in children were mentioned infrequently since these are covered in the pediatrics clerkship.

Evaluation

The results of such a program are always difficult to evaluate objectively. Subjectively, there apparently is a better awareness of emotional factors in illness in those students who have had this experience, although other changes are going on at the same time which are contributing to this result. For example, after a year of this program a psychiatrist with training in internal medicine was added to the teaching staff of the general medical clinic. His chief function is to assist students in handling the initial contacts of patients with the hospital and to foster

their sensitivity to emotional factors in the work-up.

The mobilization of students' personal problems may be considered either as a positive or negative result, depending on the adequacy of therapeutic facilities. More of these problems were mobilized in the groups of two or three students than in the larger groups.

Summary

An experiment in the integration of psychiatric and medical teaching is reported. Students are helped toward a greater awareness of the part feelings and emotions play in all illness, and are given some idea of the potential usefulness of this awareness in general practice.

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The Family Health Adviser Plan in Medical Teaching

Third-year medical students participate in the family health adviser plan sponsored by Cornell University Medical College.

BEATRICE B. BERLE

BEGINNING IN 1944 the department of preventive medicine of Cornell University Medical College offered an elective in the third year for a group of 10 students, each of whom was assigned to a family which was under the medical care of the New York Hospital and lived in the hospital neighborhood. This departure from customary teaching technique was organized under the joint supervision of members of the department of preventive medicine and the director of social service of the hospital. Each student was assigned to one family, visited in the home and became the confidential adviser to this family on health matters until his graduation two years later.

All students who did not elect to be family health advisers were required to make a comprehensive study of the adequacy of medical care of a community. In addition to these exercises, every student in the class accompanied the visiting nurse* and

the department of health nurse on their rounds, making three or four home calls each afternoon. The student, with the advice of the public health nurse, selected one of these families and returned to the home to make a nutrition study of one of its members. He then submitted a brief report on his impressions of the family's housing, nutrition, medical needs and social situation. The family health adviser plan was suspended during the war and reactivated in 1948.

Since then the program has been expanded to include all students who might wish to elect to become family health advisers for the two-year period. There were 40 students in the 1951-52 third-year class, working under the supervision of one faculty adviser who holds appointments in both the department of medicine and of preventive medicine and public health.

The same faculty adviser selected patients recently discharged from the hospital for family observation by the remaining 35 students. This group made home visits with the nurses and their contacts with a family were brief. In this exercise

*The visiting nurse is a staff member of a volunteer organization, the Visiting Nurse Association, which gives bedside care in the home.

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the purpose of a home visit is defined easily in the minds of both students and families. Though limited, it is of definite value to the family and the student.

In view of the growing interest in teaching social and environmental medicine, a preliminary report on our experience with the family health adviser plan in the teaching of two third-year classes at Cornell appears justifiable.

Objectives

The operation of this family health adviser program is based on four underlying objectives which may be summarized as follows. During his contact with a family, it is hoped that the student will:

1. Gain experience in developing a physician-patient relationship.
2. Observe and study the patient and his family in their home environment so as to appreciate the interaction of interpersonal, cultural, social and economic factors with medical conditions.
3. Observe the medical care management of patients in their homes and participate in this when possible.
4. Detect hitherto unrecognized medical conditions in various members and bring these under medical care.

While the program is directed primarily toward the training of students, it is considered that the family may derive considerable benefit from its association with the student in the following ways. The student may be (1) a liaison officer between the various physicians and clinics in the hospital and the family, interpreting the clinic doctor's instructions to the family and giving a more complete picture of the total family situation to the various clinic physicians; (2) a disinterested friend

and adviser with whom members of the family may discuss their medical and social problems.

Method

Selection and assignment of families: A student is assigned to a family living a short distance from the hospital to save traveling time and encourage him to study the hospital neighborhood and its resources. An occasional exception is made to permit a student who lives in a distant neighborhood to study a family near his home area.

Not all neighborhood patients are suitable. Individuals with a language difficulty and those who have suffered from a cerebral accident, for instance, cannot communicate easily. Families with young children are particularly valuable for teaching, and with the help of the public health nurse in the department of obstetrics, 20 neighborhood pregnant women who were registered in the antepartum clinic were assigned to students for the first time in 1951-52. The family health adviser was presented to them as a student doctor who would act as a liaison between them and the hospital and would take a special interest in the new baby as well as the health of other family members.

Other neighborhood families are selected from the faculty adviser's clinic practice and, with the help of the house staff, from the medical and pediatric services. No families are assigned from the department of surgery as the surgical clinical clerkship does not take place until the fourth year and there is no opportunity for continuing contact between a third-year student and patients on the surgical service.

Families are assigned as early as possible during the first trimester to those students who are clinical clerks

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in medicine and pediatrics, and to students who are assigned to the preventive medicine section during the early part of the year. With the cooperation of the dean's office, students who are to have only a brief contact with families are placed in the sections reporting to preventive medicine in the second and third trimester.

Supervision of students: The third-year class is divided into six sections of 14 students. Each group is assigned in rotation to the department of preventive medicine for one day a week during a six-week period. It is during this period that the most active instruction of the student is instituted.

Operation of Program

FIRST FRIDAY MORNING: A 30-minute orientation meeting of the entire section of 14 students is held. Each student is given a card with the name, address and hospital number of the patient assigned to him. Before the Wednesday meeting he is expected to read and summarize the patient's chart, as well as any charts that may be available on other members of the same family.

FIRST WEDNESDAY AFTERNOON: Each student has a scheduled 15-minute conference with the faculty adviser prior to making his first home visit. Information concerning the family that has been gleaned at the bedside by the student, or in the clinic by the faculty adviser, or from any other source, as well as that contained in the chart, is discussed. The faculty adviser and the student attempt to formulate the purpose of the first visit, discuss the possibilities of a continuing contact, and plan the approach to the family: topics to be discussed and those to be avoided until closer rapport has been established. Students are urged to report

progress or problems to the faculty adviser throughout the academic year at two or three week intervals or, in the case of crisis, more often. The faculty adviser keeps "open" office hours on Wednesday afternoons for this purpose and is available at other times by appointment.

SECOND FRIDAY MORNING: The entire section meets for 30 minutes. The department of health nutritionist discusses the manner in which a nutrition study is to be conducted. The student selects the member of the family he is visiting who probably would benefit most from such a study. Final instructions on the first home visit are given by the faculty adviser. The student then goes out to the home and carries out his instructions. If he encounters any difficulty, he always can turn to his faculty adviser for help.

FIFTH AND SIXTH FRIDAY AFTERNOONS: A total of two hours are spent on these afternoons, with one-half of the section of 14 students meeting on each of the Fridays.

Group A (three or four students) spends one hour with the nutritionist discussing the diet studies. Group B (three or four students) meets with the head of the department, the faculty adviser, the district health officer and a social worker or public health nurse who might have special knowledge of the particular families under discussion. Each student reports on his family, and group discussion is invited. At the end of the first hour, Group A and Group B switch places.

The student also is expected to report his observations to whatever clinic or clinics various members of the family may be attending. Where this is not possible the faculty adviser endeavors to contact the clinician. The resident, the social worker

and the public health nurse who are concerned with the family are advised of the student's role with the family, and the family health adviser's name is noted in the hospital chart.

When the student has been assigned to a family from the medical or pediatric ward during an early term, the group meetings during the preventive medicine period are used for reports of progress or for discussion of special problems of this family.

Other group meetings are held throughout the year for continuing joint discussion of the families under care. These usually are held during the lunch hour. Three or four times a year a special extra-curricular meeting is scheduled at which attendance is voluntary. At this meeting there is general discussion of a topic which is prepared by one of the students.

Students keep a log of their visits to the family and to other interested parties. At the end of his attendance upon the family, each student submits his log, together with a summary of his findings and recommendations, and an appraisal of the housing conditions of this family.

The dietary study is completed during the preventive medicine term. After it has been reviewed by the nutritionist and suitable recommendations have been formulated, the student takes this information to the family and helps them follow out the recommendations.

The family health adviser's role: The student does not write a prescription in the home, nor is he authorized to administer parenteral medication. His standing with the family therefore depends upon the development of a physician-patient relationship that is based on the con-

fidence he inspires and the services he is able to mobilize in case of need.

One student expressed surprise at "the confidence a family will develop in any doctor who takes a personal interest in them." This confidence may manifest itself through the telephone call made to the family adviser in time of emergency. If the situation appears to be serious, the adviser will recommend that the patient go to the emergency ward and will meet him there.

Our experience so far agrees with that of other groups in that it indicates that students call on their common sense in all matters dealing with patients. They have a "keen sense of their own limitations and rely constantly and heavily on their faculty adviser"¹ and on other members of the hospital staff.

At times an operation or a treatment recommended by the clinic or the ward physician is not accepted until the patient has discussed the matter with his adviser. For instance, an aged actor was discharged with the diagnosis of carcinomatosis and the recommendation that the social service department be utilized to plan terminal care for him. The patient did not know his diagnosis and always had been independent and self-reliant. He felt he would be able to continue to live in his rooming house and work as doorman at a nearby movie house.

After conferring with the social worker, the adviser visited the old man in his room and became his friend as he listened to the yarns of "summer stock" 50 years ago. After a month at his former occupation, the old man found he was more tired than he had been willing to admit. He gradually came to accept the adviser's point of view, and he put in his application for admission to a

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nursing home which was run by the actors' union. He was admitted to this home three months after his discharge from the hospital. In this case, the sympathetic understanding and the respect for the patient's independent spirit shown by the adviser were instrumental in carrying out an important medical recommendation.

Examples of the social and psychological implications of illness may be found in every family that is visited. The adviser may play an important role in bringing these factors to the intramural staff of the hospital. The following illustration brings out this point.

A girl of 12 was hospitalized for the evaluation of a hitherto inexactly diagnosed congenital heart condition. In spite of angiocardiography and cardiac catheterization, the exact nature of the lesion remained in doubt and the advisability of surgery was debated by the hospital staff.

The student who visited the home found that the child's father was beating his wife and children, and was carrying on an extramarital affair. The mother was in poor health, suffering from numerous vitamin deficiencies which were the result of a self-imposed starvation regime. She was considering divorce. The family was referred to the Catholic charities for help.

On the basis of the social information obtained by the student, the department of pediatrics decided that since a successful outcome of surgery was doubtful in this case, no purpose would be served by subjecting this family to possible additional trauma at this time.

Discussion

In the program just described, an opportunity is made for every student in the third-year class to visit

a patient in his own home—the purpose of the visits being individualized in each case and the contact between student and family varying from a few weeks to two years. The difficulties in the way of smooth operation arise in part from curriculum and schedule mechanics, but most of all from the fact that the manner in which medical education in this field will be conducted needs more exact definition.

It would seem a natural step in the development of continuity between intra- and extramural care to arrange for the clinical clerk on the pavilion to become the family health adviser when the patient leaves the hospital. But most university hospitals have ceased to be neighborhood hospitals and have become consulting centers for a large area. This means that the number of neighborhood patients on the pavilion at any one time is likely to be less than the number of clinical clerks. The number of possible contacts between clinical clerks and neighborhood patients in the third year is reduced further because clinical clerkships in surgery take place in the fourth year.

If the family health adviser plan is adopted widely, each medical school and university hospital will develop its own solution to the problem of finding a sufficient number of neighborhood families and providing suitable means for the introduction of students to them. In this respect the Boston University Medical School is particularly fortunate as the domiciliary medical care program, which has been operating for some years, provides a large pool of neighborhood families.²

We have found that the adviser who can be made to feel at the outset that he has a particular service to render the family turns in a more

comprehensive social study and gets a great deal more out of the experience than the student who is just going to the home to satisfy curriculum requirements. The service an adviser may render often depends upon an understanding of the family's cultural background and of the personalities involved, which suggests that more complete information concerning the student's aptitudes and interests than that contained in the academic record would be helpful to the instructor in trying to "match" family and health adviser.

The nature of the information desired and the means by which it might be collected are matters requiring further study. A systematic appraisal of the student's personality and his cultural background also might be useful in helping him overcome a natural tendency to become overidentified with his patients or to pass moral judgments on their behavior.

The health adviser should follow the patient from the hospital to his home. In addition, integrated medical care for the family must be provided by the outpatient department. Unfortunately, in many university hospitals the care of each individual may be segmented between many different physicians in many different clinics. The hours when the clinic meets may not be those when the student can leave another assignment to report to the clinic physician. The clinic physician, whether house staff or attending, may be interested in following only the patient's reaction to a new drug or the development of a particular heart murmur, and may be reluctant to discuss broader aspects of the case with the student or to release his patient to the physician working with the students.

If clinics are staffed by several departments including social service,

and if these clinics attempt to take care of the medical needs of the whole family, this problem would disappear. Furthermore, if the family health advisership comes to be considered as important as the clinical clerkship in the training of a good doctor, then better preparation of the student is necessary.

In addition to knowledge of the various branches of medicine, the adviser needs training in the technique of interviewing. He also needs to increase his knowledge of anthropology, sociology, history, economics and politics. A familiarity with the developing techniques for measurement in the social sciences is essential. It is possible that most of this information may be acquired through the appropriate undergraduate courses, but it needs to be supplemented through supervision of the student's work by sociologically trained personnel in the medical school. In any event, the coordinated efforts of the several departments in the medical school are needed to produce a physician who will be capable of coping with the intricate problems of comprehensive medical care.

Summary

The operation of the family health adviser plan for third-year medical students at Cornell University Medical College has been outlined.

Difficulties encountered and the possibilities of modifying the present plan have been discussed.

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Editorials and Comments

Senate Bill 1153

ON MARCH 2, 1953, Senator Ives (R., N.Y.), for himself and Senator Flanders (R., Vt.), introduced S.1153 which was read twice and referred to the Committee on Labor and Public Welfare. It was given the title, "National Health Act, 1953."

The bill has four main purposes:

(1) "to enable voluntary prepayment health service plans to make their services generally available in the communities which they serve at charges based on the income of the subscribers;" (2) "to encourage the establishment of local administrative facilities embracing functional health service regions and districts in order to facilitate the effectuation of present and future health programs;" (3) "to enable nonprofit hospitals and medical and nursing schools to maintain and improve their services and facilities;" (4) "to assist voluntary prepayment health service plans to construct and equip personal health service centers."

The administration of this program would be under the Surgeon General of the Public Health Service, subject to the approval of the administrator of the Department of Health, Education and Welfare, and with the advice of a 10-member federal hospital council, which is itself expected to appoint further special and technical advisory committees of persons "expert in the various subdivisions of the health field."

All of these purposes are extremely useful and important and the bill is therefore worthy of most careful study and evaluation, particularly that portion devoted to the creation of a 12-member federal health study and planning commission which is charged with formulating a 20-year national health plan.

Of most interest to medical educators are the provisions for assistance to medical and nursing schools. The basic provisions are: (1) "to each school of medicine which provides training leading to a degree of doctor of medicine, [A] the sum of \$500 for each enrolled student, plus [B] an additional sum of \$1,000 per student to the extent that the present enrollment is in excess of the average past enrollment." (2) "The Surgeon General, after consultation with the Federal Health Council, shall make such [construction and equipment] grants in the order of the estimated importance or value of the construction and equipment in alleviating the shortage of personnel adequately trained in the medical and nursing fields. No such grant shall be in excess of 50 per centum of the cost of the construction and equipment with respect to which it is made."

To receive federal grants under this bill, a medical school would have to be certified by the state health authority, agree not to impose any "unreasonable restrictions" upon the admission of out-of-state students, agree to submit

from time to time "such reports as the Surgeon General may find necessary . . ." and must not "exclude, limit or otherwise discriminate against any person or persons seeking admission as students to such institution because of race, religion, creed, color or national origin." (The right of religious or denominational schools to select their students exclusively or primarily from members of such religion or denomination is, however, recognized and upheld.)

In comparing the medical school subsidy section of this bill with that of S.337 of the 82nd Congress, 1st session, the following changes are noted: schools of osteopathy are not mentioned in this new bill; the payment for new students is upped from \$1,000 to \$1,500 in the new bill as a greater incentive to schools to increase their enrollment.

Though there is much about S.1153 which is deserving of vigorous support, many medical educators will have grave reservations as to the wisdom of (a) such large federal expenditures in view of the present serious effort of the Congress to bring an end to deficit financing; (b) providing new grants to medical schools while at the same time the teaching grants to medical schools for cancer, cardiovascular diseases and mental diseases are being reduced for reasons of economy; (c) making the incentive to increase entering classes so great. A subsidy of \$1,500 for each new student would appear to be high enough to tempt hard-pressed schools to take more entering stu-

dents than they should, but not enough to provide the additional staff and facilities that would be needed to handle adequately the increased numbers.

The Medical School's Responsibility for Training Paramedical Personnel

THE RAPIDLY EXPANDING DEMAND for technicians and paramedical personnel of all types presents a serious challenge to our medical schools. Already overburdened by financial problems in meeting the demands for undergraduate teaching, can medical schools assume further responsibility for training the auxiliary personnel increasingly required to operate our hospitals and medical research institutions?

The answer to this question must be "no" if medical school staffs are unwilling or unable to appreciate the opportunity implied in the challenge, or if they cannot undertake the imaginative planning of what might be involved. On the other hand, the answer might well be "yes" if medical school staffs would realize what little additional effort (and money) need be expended to perform the urgently needed public service of developing effective training programs for these important workers. It is quite possible too that this project might bring increased income and support from private and public sources alert to the problem.

The AMA Council on Medical Education and Hospitals already approves training programs in clinical laboratory technology, radia-

tion technology, physical therapy and occupational therapy. Unfortunately, many of these programs are maintained in hospitals with no medical school affiliation and, thus, without the pedagogic philosophy of effective, coordinated and professional medical school teaching. Many such hospital inservice training programs may be suspected of seeking to get service rather than seeking to give training. Successful programs in these fields could be developed readily by many medical schools, without much additional effort or expense, through the use of facilities in their teaching hospitals. Certainly many students in the paramedical and technology fields welcome the chance to get instruction (and credit) from approved medical schools.

The Armed Forces medical program includes systematic training curricula for a wide variety of the auxiliary health services, and the success of the effort in this instance gives good reason for medical schools to survey the situation to determine whether the methods and principles involved could be profitably applied to lay health training programs.

Medical schools will naturally be

approached more and more, if their staffs are adequate for teaching medical students, to assume responsibility for training programs in clinical laboratory technology, radiation technology, physical and occupational therapy, dietetics, clinical psychology, medical record librarianship, hospital social service, public health technology and hospital administration. This is as it should be if the medical profession is to retain its traditional position of prestige and leadership in all health affairs. With the extension of the interest of medical schools in teaching auxiliary health personnel, closer liaison might develop with nursing, dentistry, public health and pharmacy.

If medicine is to continue to give its leadership to the health teams of the future, it might be wise to begin at the teaching level to make contact with all components of those teams. And if medical colleges are to have added responsibilities for teaching paramedical personnel and technicians, sufficiently increased staff and facilities must be provided to preclude any possibility of weakening the teaching program for undergraduate medical students.

Chauncey D. Leake

NEWS DIGEST

Dr. Arthur C. Bachmeyer, 1886-1953

ON FRIDAY, May 22, 1953, Dr. Arthur C. Bachmeyer suffered a coronary occlusion and died just as he and Mrs. Bachmeyer were about to board a plane at the Washington National Airport.

In the passing of Dr. Bachmeyer the Association lost one of its most active and loyal supporters. Elected first to the Association's Executive Council in 1933, he served faithfully as its treasurer from 1935 to 1949 and culminated 18 years of service to the Association by serving as its president in 1950-51.

Dr. Bachmeyer was born December 6, 1886, in Cincinnati, Ohio. He took his M.D. degree at the University of Cincinnati in 1911 and after two years of surgical internship at Cincinnati General Hospital entered the field of hospital administration. He served successively as assistant superintendent (1913-14) and superintendent (1914-1935) of the Cincinnati General Hospital, superintendent of the Cincinnati Tuberculosis Sanatorium (1914-35), professor of hospital administration at the University of Cincinnati (1920-35) and dean of the College of Medicine of the University of Cincinnati (1925-34). During the period of World War I he served as first lieutenant, captain, major and lieutenant-colonel in the Medical Reserve Corps of the United States Army.

In January 1935 he left Cincinnati to assume the position of director of clinics, and associate dean of the division of medical and biological sciences at the University of Chicago, which position he occupied until his retirement in 1951.

Among Dr. Bachmeyer's services to national organizations were the following: president of the American College of Hospital Administrators (1940-41), director of study for the Commission on Hospital Care (1944-46), member of the board of the Hospital Service Corporation, past president and treasurer of the American Hospital Association since 1946, member of Medical Advisory Committee of the National Securities Resources Board since 1948, vice chairman of the Committee on the Survey of Medical Education since 1948.



After his retirement from his active position at the University of Chicago in 1951 he continued to serve as a consultant to that university's \$10 million building program, and to a number of other medical colleges with building programs under way. He also assumed the directorship of the Commission on Financing Hospital Care, and it was on work of this commission that he was engaged when the fatal heart attack occurred on May 22.

Dr. Bachmeyer's contributions to literature include the following: "The Hospital in Modern Society" (with Gerhard Hartman) 1943; "Hospital Care in the United States," 1947; "Hospital Trends and Developments," 1948. He also served as chairman of the editorial board of the *Modern Hospital*.

Among the honors awarded Dr. Bachmeyer in his distinguished career are the following: Alpha Omega Alpha; honorary D.Sc. 1935 from the University of Cincinnati; honorary D.Sc. 1949 from the University of Nebraska; Award of Merit from the American Hospital Association, 1943.

Surviving members of Dr. Bachmeyer's family include his wife Mary Hicks Bachmeyer; two sons, Robert Wesley and William Leonard, and a daughter Janet Ann.

Dr. Bachmeyer had a real affection for country life and for many years had operated the farm at Loveland, Ohio to which he returned on his retirement in 1951. It is regrettable that he lived to enjoy for so few years the farm home he had prepared with such foresight through the years of his busy life.

Listing his chief interest as administrative medicine, Dr. Bachmeyer was considered the father of that important branch of medicine and he will long be remembered for his outstanding contributions to the administration of medical education and to the equally important field of hospital administration.

Health Care at Harvard

Beginning July 1, Harvard University will offer comprehensive medical and health care to students in medicine and related areas. This experimental program will provide office and home care, and hospitalization through Blue Cross, to about 800 students in the medical school, school of public health, school of dental medicine and division of medical sciences. About 400 employees of the several schools also will be included.

The program, designed to meet the special health problems of students and employees in the medical teaching area of the university, will focus on preventive medicine. It will follow closely recommendations made by a

special commission which studied the university's medical needs, and the experience gained is expected to aid in future planning of health and medical services for other divisions of the university.

Students will be required to pay \$50 a year for the comprehensive health service. This will entitle them to coverage for a full calendar year at the school facilities or outside of Boston. Because of the experimental nature of the program and the educational values involved, the participating schools will meet any excess costs.

Services available to students and employees will include preventive medicine, general and specialist care, all diagnostic procedures, usual phys-

ical examinations and a complete health evaluation. Office and home care treatment for a single medical condition will be provided at full coverage for a four-week period. Hospitalization, made possible through Blue Cross, will give full coverage for 60 days, with another 60 days at reduced cost. Married students may extend the Blue Cross benefits to other members of their families by paying an additional fee. Until there has been adequate experience with the program, however, families cannot be included in the office and home care coverage.

AMA 1952 Hospital Census

The trend in growth of American hospital service and facilities continued upward in 1952, according to the 1952 annual census of the AMA Council on Medical Education and Hospitals. Statistics for all registered hospitals for the past three years illustrate this trend:

	1950	1951	1952
Number of hospitals	6,430	6,637	6,665
Number of beds	1,456,912	1,529,988	1,541,615
Admissions.....	17,023,513	18,237,118	18,914,847
Births	2,815,806	2,999,371	3,170,495

Governmental hospitals with 71.3 per cent of total beds, provided care for 26.3 per cent of all patients admitted in 1952. Nongovernmental facilities, with 28.6 per cent of total bed capacity, admitted 73.7 per cent of all inpatients. This difference reflects the hospitalization required by psychiatric patients, the majority of whom are cared for in long-term governmental facilities.

The increasing problems of mental health were highlighted in the 1952 census. The nation's 585 psychiatric hospitals, which make up less than 9 per cent of total facilities, had a greater bed capacity than any other group of hospitals. The total of 704,056 patients in these hospitals represented 53.7 per cent of the daily patient load in all hospitals.

More than three million babies were born in hospitals in 1952, the highest figure in American medical history. They were about 80 per cent of the nation's total births for the year and were a five-fold increase over the 1929 hospital birth rate when 621,898 babies were born in AMA hospitals.

The census, 32nd annual report prepared by the council, was published in the May 9 issue of the *AMA Journal*.

Final Library Report

The final report of the Committee on Criteria for Medical School Libraries of the Medical Library Association was published recently. The report presents information gathered in a survey undertaken in February 1952 at the request of the association's medical school section. The project was approved by the Association of American Medical Colleges and the AMA Committee on Medical Education and Hospitals.

Information included in the report was tabulated from survey questionnaires completed by 89 schools which represented almost 97 per cent of the libraries in schools of medicine and basic medical sciences listed by the AMA in 1951-52.

Data gathered in the survey were compared to medical library situations in 1939. The report indicates that:

—There is at least one full-time librarian in every medical school library.

—Instruction of medical students in use of the library has increased markedly.

—Strong departmental libraries were fewer in number.

—The size of the medical school library has increased. The smallest collection totaled 3,000 as compared to 2,500 volumes in 1939; the largest totaled 263,000 instead of 148,000; the median number of volumes was 35,500 instead of 20,000.

Brookings Health Survey

A two-year survey conducted by the Brookings Institution indicates that progress in medical science, increased use of medical facilities and control of communicable diseases are the major causes for improved health among Americans in the past 50 years. The survey, directed by Dr. George W. Bachman, is divided into three major sections: (1) "Health Progress in the United States in the Past 50 Years," (2) a study of med-

ical personnel, and (3) an inventory of health facilities and services.

As reported in the *New York Times*, the survey shows that 200,000 or more physicians make up the core of the nation's health resources. Professional health personnel have increased 40 per cent in the years between 1900 and 1950 and are distributed as follows: physicians, 16 per cent; dentists, 7 per cent; auxiliary nursing personnel, 30 per cent; pharmacists, 8 per cent; others, 13 per cent.

Meetings

WMA Conference

Delegates from more than 20 American national medical societies and from the 48 states attended the first Western Hemisphere Conference of the World Medical Association, held April 21-25 in Richmond, Va. Conference sessions were centered around a review of medical progress and significant fields of medical exploration.

Dr. Louis Bauer, AMA president and secretary-general of the WMA, presided at conference sessions and summed up the findings of 11 panel discussions. Participating in the discussion groups with delegates were United States specialists from the 19 fields recognized by the Advisory Board for Medical Specialties, and the president of the American Academy of General Practice.

Fellowships, Grants, Awards

New ACS Scholarships

The first of several contemplated scholarships in the field of research has been established by the Board of Regents of the American College of Surgeons. The scholarships will be available to promising young men seeking a career in academic surgery who have recently finished or are in the final months of their residency training program.

Candidates must obtain the approval of the chairman of the department of surgery, dean of the same medical school and the au-

thority of an executive officer of the university making the proposal. Successful candidates will receive \$20,000 over a three-year period, to be divided as follows: \$6,000 for the first year, \$6,000 for the second year, \$7,500 for the third year. These amounts may be supplemented by the medical school or institution sponsoring a successful candidate with permission of the ACS Committee on Selection.

Medical schools or institutions will be required to provide a satisfactory place to work, adequate facilities and funds with which to support neces-

sary research. Both the institution and the candidate are expected to supply the college with a planned program. On completion of the research scholarship, the institution is expected to absorb the research scholar into its faculty and support him on a full-time basis with its own budget.

A Committee on Selection will pass on candidates, their programs and the conditions of work as outlined by the sponsoring institution. Final arbiter in selection of candidates will be the regents of the ACS.

Further information may be obtained from the Research Scholarship Committee, American College of Surgeons, 40 E. Erie St., Chicago 11.

Kappa Delta Award

An award for research in orthopedic surgery has been announced by Kappa Delta. The award consists of a \$1,000 prize, which may be given annually by the American Academy of Orthopaedic Surgeons for the best research related to orthopedic surgery and performed by an American citizen in the United States.

Selection of the winner will be made from material published after January 1, 1951, or research presented to the academy's Committee on Scientific Investigation until November 1, 1953. Further information may be obtained from Dr. John J. Fahey, 1791 W. Howard St., Chicago 26.

Rockefeller Foundation

Grants totaling more than \$3,700,000 were awarded in the first three months of 1953 by the Rockefeller Foundation. Approximately \$340,000 was distributed by the foundation's General Education Board.

Among the educational and research grants were: \$500,000 to the American University of Beirut, Lebanon, for development of the univer-

sity's medical division; \$250,000 to Stanford University for a project in experimental biology research, provided this amount is matched by the university from other sources; \$40,000, over a five-year period, to Simmons College for establishment of a graduate course in public health nursing as a joint project with the Harvard School of Public Health; \$300,000 to the Association of American Universities, over a five-year period, for general support of a fellowship program to encourage graduate study in preparation for careers in teaching and research.

Damon Runyon Fund

Grants approved by the Damon Runyon Memorial Fund for Cancer Research in April included allocations to seven institutions for continuation of cancer research projects. Since its organization, the fund has distributed more than \$6 million in grants and fellowships.

April institutional grants went to Harlem Hospital, New York City, and to six universities: Howard University College of Medicine, \$5,400; Stanford University School of Medicine, \$9,700; University of Louisville, \$5,800; University of Kansas Medical Center, \$10,000; University of Chicago, \$12,000; University of Florida, \$17,500.

New Education Foundation

A new organization, the Inter-american Foundation for Postgraduate Medical Education, has been established to encourage exchange of educators, postgraduate students and research workers in medicine and allied sciences in North and South America. The foundation is expected to coordinate and extend existing fellowship programs for Latin Americans who seek postgraduate training in the United States.

According to present plans, the foundation will channel these fel-

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lowship programs through a central agency, which in turn will coordinate its program with those sponsored by other groups with parallel or overlapping interests, such as private foundations and governmental agencies.

Financial support for the foundation has been obtained, and more

funds are being solicited from commercial firms in North America interested in furthering friendly relations between the Americas.

Dr. Alberto Chattas, of Cordoba, Argentina, is executive director of the foundation. Headquarters are located at 112 E. Chestnut St., Chicago 11, Ill.

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Albany Medical College

Dr. PAUL R. PATTERSON last month was appointed professor of pediatrics and director of the department at the medical college, and pediatrician-in-chief at Albany Hospital. He has served as research associate in the department of clinical pathology at Harvard Medical School, and as instructor in pediatrics at Harvard.

Chicago Medical School

Two faculty members have received grants from the Public Health Service. Dr. JAMES G. SHAFFER, chairman of the department of microbiology and public health, was awarded \$10,098 for "Studies on the Growth Requirements of *Endamoeba Histolytica*," and Dr. ISRAEL DAVIDSOHN, professor and head of the department of pathology, received a \$6,372 grant renewal for continuation of his studies in "Immunohematologic Aspects of Hemolytic Anemia."

Cornell University

Ground-breaking ceremonies for F. W. Olin hall were held recently. Dean JOSEPH C. HINSEY presided at the ceremonies, in which JAMES O. WYNN, vice president of the Olin Foundation and Dr. S. BAYNE-JONES, president of the Joint Administrative Board of the New York Hospital-Cornell Medical Center, participated. The hall will be used as a stu-

dent residence. Cost of the building and most of the furnishings will be paid by a \$2,549,000 gift from the Olin Foundation.

The Alumni Reunion Association's fifth annual award for "an outstanding contribution to medicine" was presented to Dr. WILLIAM C. MENNINGER, director of the Menninger Foundation, Topeka, Kan. Dr. Menninger is a member of the class of 1924. The award was presented by Dean JOSEPH C. HINSEY, who cited Dr. Menninger's "achievements in the teaching and practicing of psychiatry."

George Washington University

Two grants, totaling \$21,271, have been awarded for study of the effects of aureomycin, terramycin and penicillin on cancer, when these drugs are used in conjunction with mustard drugs and x-ray treatments. The funds are \$12,000 from Lederle Laboratories and \$9,271 from the Charles Pfizer Company. Dr. JEANNE C. BATEMAN, clinical instructor in medicine at the medical school and consultant in hematology at the university cancer clinic, will carry out the research.

A new biological handbook, "Standard Values in Blood," was edited by Dr. ERRETT C. ALBRITTON, professor of physiology. The volume was prepared under direction of the National Research Council's Ameri-

can Institute of Biological Science, and was published by the Saunders Publishing Company.

Johns Hopkins University

Dr. WARFIELD THEOBALD LONGCOPE, professor of medicine from 1922 until his retirement in 1946, died recently. A graduate of Johns Hopkins, he served as associate professor of applied medicine at the University of Pennsylvania and as Bard Professor of Applied Medicine at Columbia before returning to Baltimore. He was a former director of the Rockefeller Institute of Medical Research.

University of Minnesota

A continuation course in arthritis and allergy for general physicians was conducted last month at the Center for Continuation Study. Visiting faculty included Dr. WALTER S. BURRAGE, chief of the allergy clinic and associate physician, Massachusetts General Hospital. Dr. C. J. WATSON, professor and head of the department of medicine, directed the course.

Sir ALEXANDER FLEMING, St. Mary's Hospital, London, discoverer of penicillin and winner of the Nobel Prize, delivered the annual Duluth Clinic Lecture on May 12. He discussed "Some Aspects of Antibiotic Therapy." Sir Alexander also participated in a symposium on antibiotics with Dr. WESLEY W. SPINK, Dr. WALLACE HERRELL, Dr. WENDELL H. HALL and Prof. LESTER E. HANSON.

Dr. GAYLORD W. ANDERSON, professor and director of the school of public health, was re-elected president of the Association of Schools of Public Health, at the annual association meeting in April. This is the third year Dr. Anderson has served as president of the organization.

State U. of New York (Brooklyn)

A new annual lectureship was inaugurated by Dr. JEAN OLIVER, professor of pathology, May 12. Dr. Oli-

ver presented a paper on "The Recovery Phase of Acute Renal Failure." The lectureship is sponsored by alumni and undergraduate members of the local chapter of Phi Lambda Kappa.

A testimonial dinner was held last month honoring Dr. WILLIAM DOCK, professor of medicine. During the dinner a portrait of Dr. Dock was presented to the college and Kings County Hospital by a group of his past and present associates as a tribute to his guidance, teaching and contributions to medicine. Principal speaker at the dinner was Dr. WILLIAM RESNICK, clinical professor of medicine at Yale University.

Northwestern University

Gifts to support two medical research projects have been received. These are a \$5,000 grant from the Clarence F. G. Brown Memorial Fund of the Institute of Medicine of Chicago, for support of a research fellowship in digestive diseases, and \$1,500 from the Good Roads Machinery Corp., Minerva, Ohio, in support of Dr. CHAUNCEY MAHER's research in the field of heart disease.

University of Oregon

The ways and means committee of the state legislature has approved construction of a new \$2,200,000 dental school building. The present school is in downtown Portland, but the new facilities will be built on the medical school campus.

Dr. HOWARD P. RUSH, clinical professor and head of the division of cardiology, was elected a director of the American Heart Association at the annual association meeting in Atlantic City this spring.

The following gifts and grants were accepted recently: \$23,000 from the National Cancer Institute of the Public Health Service for research of leukemia under Dr. E. E. OSGOOD; \$7,652.14 from the estate of Ida May Manley for cancer research; \$8,500

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from the National Institute of Neurological Diseases and Blindness, PHS, for research on metabolism of the lens and cornea of the eye under direction of Dr. JOHN E. HARRIS; \$47,736.97 for the Doernbecher Memorial Hospital for Children from the estate of Mrs. Nina Bell.

University of Pennsylvania

A Fulbright professorship to Fuad I University, Cairo, Egypt, has been accepted by Dr. LEROY M. ENNIS, professor of oral roentgenology in the school of dentistry and the graduate school of medicine. Dr. Ennis has been granted a leave of absence for a year and will report to Egypt September 1.

Dr. I. S. RAVDIN, John Rhea Barton professor of surgery and chief of surgery at University Hospital, returned recently from inspection of medical installations of the U.N. forces in Korea and Japan. Dr. Ravdin undertook the tour on a commission from the Secretary of Defense.

University of Tennessee

Dr. WILLIAM HALE has joined the staff as a professor of bacteriology. He had been senior scientist and head

of the department of bacteriology and virology, Brookhaven National Laboratories, Long Island. He will continue as consultant to the laboratories, which are sponsored by the Atomic Energy Commission. Dr. Hale received his M.D. degree from Yale University and formerly was professor and head of the department of bacteriology, University of Iowa.

Grants totaling \$16,227 have been awarded to three members of the division of physiology for research. These are: \$2,993 to Dr. ROBERT C. LITTLE for study of the production of heart sounds, and \$7,770 to Dr. C. RILEY HOUCK for study of hypertension in nephrectomized dogs, both sums from the American Heart Association; \$5,464 to Dr. LESTER VAN MIDDLESWORTH, from the Public Health Service, to compare the metabolism of radioactive iodine in cystic and noncystic thyroid adenomas with the metabolism in normal thyroid tissue. Dr. Van Middlesworth also will attempt to produce thyroid adenomas in animals.

Construction contracts have been awarded for the new chemistry-physiology building, first of three additions to be erected under a \$4,800,-



EXCAVATION WORK has started on the new chemistry-physiology building to be constructed at the University of Tennessee Medical Units. The building is the first of three additions to be built under a \$4,800,000 expansion program.

000 expansion program of the university's medical units, authorized by the 1951 legislature. The five-story building will provide a total of 70,000 square feet of space. Other planned expansion will include a new administration - postgraduate building, a medical-surgical building, addition of a new floor to the pharmacy building, and remodeling of the anatomy and the library facilities.

Hahnemann Medical College

Four staff members are on a lecture tour through Pennsylvania as participants in the Graduate Education Institute of the state medical society. They are Dr. NEWLIN F. PAXSON, professor and head of the division of women and the department of obstetrics; Dr. BRUCE V. MCFADYEN, professor and head of the department of gynecology; Dr. DONALD T. JONES, associate professor of orthopedic surgery, and Dr. J. ANTRIM CRELLIN, clinical professor of medicine.

Recently awarded research grants include \$9,000 from the Atomic Energy Commission as an addition to a previous grant for studies on radiation burns, with Dr. J. S. ROTH principal investigator; \$5,000 from the Homemakers Products Corp., to the division of pediatrics and women for research on some company products; \$5,000 from the Office of Naval Research, for study of the relationship of methionine to brain metabolism under Dr. ARTHUR WASE and Dr. Roth; \$6,000 from the National Cancer Institute to Dr. JOHN H. VANDYKE; \$11,996 from the Office of Naval Research to Dr. BERNARD BRIDDY for virus research through 1953 and 1954; \$5,610 from the National Institutes of Health to Dr. CARL ALPER.

Wayne University

An alumni award for outstanding service and achievement was presented to Dr. WILLIAM JOHN STAPLETON JR., emeritus professor of jurisprudence, ethics and economics and medical history. Dr. Stapleton received

the award at the alumni reunion, May 9. Four other outstanding alumni were honored.

Grants from the National Institutes of Health, Public Health Service, included \$15,438 for research in problems related to blood coagulation and \$6,500 to continue research in the use of estrogen determination for investigation of hormonal functions.

Yale University

Two new faculty appointments have been announced. Dr. ARNOLD D. WELCH is professor of pharmacology and chairman of the department, succeeding Dr. WILLIAM SALTER, who died in July 1952. Dr. NORMAN A. CAMERON will join the faculty on July 1 as professor of psychiatry and will devote his major effort to research. Dr. Welch comes to Yale from Western Reserve University where he has been head of the department of pharmacology since 1944, and Dr. Cameron is leaving the University of Wisconsin where he served as professor of psychology and psychiatry.

Dr. SIBYLLE ESCALONA, assistant professor at the Child Study Center, has been named executive officer of the Social Research Foundation's Fund for Research in Psychiatry. On the request of the foundation, Yale University has provided headquarters for the \$6 million fund, which will be used to support psychiatric research at universities and institutions throughout the country. The seven members of the fund board, representing six leading medical schools, are now working on organization. Dr. FREDRICH C. REDLICH, professor of psychiatry, is chairman of the board. Members are Dr. CHARLES D. ARING, professor of neurology, Cincinnati; Dr. JOHN D. BENJAMIN, research psychiatrist, Colorado; Dr. VERNON W. LIPPARD, dean, Yale School of Medicine; Dr. DAVID SHAKOW, professor of psychology, Illinois; Dr. GEORGE W. THORN, professor of medicine, Harvard; Dr. JOHN C. WHITEHORN, professor of psychiatry, Johns Hopkins.

Audiovisual News

Visits to Medical Schools: A Progress Report

FROM ITS FIRST days the Medical Audio-Visual Institute has recognized that methodical and repeated visits to the medical schools are essential to its proper broad functions of information, liaison and consultation. Close association with medical teachers, and on-the-spot studies of classroom practices, facilities, problems and solutions are obviously necessary for the effective development of channels of information. They are also indispensable to the evolution of those personal contacts so essential to local and central functions alike. Central agencies, such as the Association of American Medical Colleges and the Institute, have the task of learning from the teacher and, in turn, aiding him to learn from others through a two-way passage of information and mutual experimentation in medical education.

The Plan for Medical School Visits. Week-long AV surveys of George Washington by V. F. Bazilauskas, and of Western Reserve by Bernard V. Dryer, and many Institute staff visits to schools on specific errands provided preparation for the first methodical itinerary of medical college visits. In the winter of 1952 ten southeastern medical schools were visited in succession.* These were: Tennessee, Vanderbilt, Alabama, Emory, Georgia, South Carolina, Bowman Gray (of Wake Forest), Duke, Medical College of Virginia and Virginia. Visits were informal in nature. Their program of action was designed to explore the practicability and values of such consultations.

*Costs borne jointly by the Institute and the University of Illinois (Hertzier Visual Education Fund).

On the basis of the favorable group reaction to the first systematic itinerary, another group of schools was visited in February and March of 1953. The schools covered were: Tennessee,* Arkansas, Oklahoma, Southwestern Medical College, Baylor, Texas, Tulane, Louisiana State, Mississippi, Alabama,* Vanderbilt* and Meharry Medical College.

The Procedure of the Individual School Visit. On both trips an average of two days was spent at each school. Although the visits followed a general pattern, this was varied in each case according to the judgment of the dean. At most of the schools an informal talk and demonstration was given to whatever staff people could be assembled. The function and aims of the Institute were explained and different types and methods of visual teaching media were discussed and illustrated by lantern slides and motion pictures selected to bring out the differences between effective and poor materials. The results of studies on the capacities and limitations of individual media and on their adaptability to teaching situations were reported. Projection problems and classroom lighting were discussed and the advantages of twilight projections demonstrated.

The question period which followed the talk invariably brought out many additional points of interest. The concept of short short films¹ as a basic tool of medical instructors was received with great interest. The Library of Congress medical motion picture reference card service² was actively discussed as a solution for the problem of essential descriptive information on films.

In each school as many heads of departments were contacted as was possible. Through these calls much

*Revisited enroute.

was learned about individual philosophies and practices regarding visual teaching.

Some General Observations on Medical School AV Teaching. Many practical and obtrusive problems associated with audiovisual teaching were discussed recurrently. Cost was invariably raised as a primary issue. Production difficulties with slides, motion pictures, charts, models, teaching and scientific exhibits, etc. were another principal concern.

The difficulty of procuring AV materials appeared to be a serious complaint of many teachers, and by all odds was the number one factor influencing visual teaching practices in a majority of the schools. In nearly every case where AV tools and facilities for using them were seriously lacking, it was because of the absence of any illustration service; in turn, this was usually a matter of insufficient funds rather than any lack of interest.

There was much evidence of the growing use of audiovisual materials in the schools. An increasing number of illustration departments have been established in the past 10 years. Of 19 schools visited methodically, two had no illustration services whatever. Three others had photography only. The remainder had one or more staff artists and photographers. The smallest of these employed one of each, while the largest had a staff of 11 including a departmental secretary.

The services supplied by these departments of illustration (or visual education) vary from the routine production of photographs, drawings, lantern slides and graphs for day-by-day research and teaching needs to a more comprehensive type of service which involves the making of models and exhibits, the production of motion pictures (including animation), the illustration of books, the operation of projection services and many other related functions. The division of medical art and illustration at Duke University is an outstanding

example of a comprehensive service.

The Administration and Operation of Illustration Services. At each school a considerable amount of time was devoted to observation of the operation of illustration departments and to discussion of concepts of visual education and production methods with the artists and photographers. In several cases the department was new and in process of establishment, as at Arkansas. Others had been functioning for years, and were broadly integrated into the teaching and research activities of the school, as at Southwestern's department of medical art and visual education. In all cases the philosophy of education rather than technical services alone was a cardinal issue in discussions of the growth and objectives of the departments.

In each school inquiries were made regarding the administrative organization and operation of the illustration or visual education services. No standard plan exists. However, the structure and function of these departments within the schools divided them into three broad types.

TYPE 1: A centralized autonomous department with its own operating budget and departmental head reported either directly to the dean or to a visual education committee appointed by the dean. The department head was usually a trained medical illustrator, although in two schools he was a photographer. Routine illustration services were supplied to all departments without charge.

TYPE 2: A centralized department of similar organizational structure charged for all work on a revolving fund basis. The scale of prices for services was usually low, since the earnings of the department often were augmented by funds from the general school budget. Most of the schools visited followed this plan.

TYPE 3: A noncentralized service, in which illustrators and photographers operated independently, charged at cost for work provided. In

these cases the supervision of personnel and services was either under the dean or departmental heads.

Each of these plans, or some variant of them, can operate to advantage according to the needs and budget of a particular school. Experience seems to show, however, that the most generally satisfactory method is one which imposes the fewest restrictions on teachers and investigators in obtaining the visual materials which they may require.

The idea of making a charge for all forms of illustrated services is theoretically sound, and is favored by almost all college business managers. Notwithstanding this apparent soundness, the fact of payment for every small service tends to restrict and even to discourage the use of AV materials and to interfere with the development of more effective teaching techniques as fostered by easy availability of AV media.

Physical Facilities for AV Education. One of the principle objectives of the visits was to observe and study the existing facilities and equipment for the effective use of multisensory teaching media in medical education. Classroom design, methods of illumination, chalk boards and their use, control of light sources, projection facilities and handling, color of walls, rooms, fixtures et al. were specific subjects of observation. Facilities for teaching exhibits and displays in corridors, museums, laboratories and recreational areas were examined. Many observations were made concerning the over-all design of the medical school and its associated teaching hospitals as places for teaching and learning. The Institute is continuing to collect information and data on the physical requirements for improved AV teaching, for later publication.

A Summary of Observations. Insofar as these systematic exploratory visits to 21 medical schools permit conclusions, medical audiovisual education appears to be gathering inter-

est and support. Visual education services are multiplying in the medical centers. Newer concepts of AV technology in terms of the special needs of medical colleges are developing hand in hand with the increasing complexity of medical education. Faculties are seriously concerned with AV fortification of their personalized teaching. Provocative experiments are afoot, and will soon become common knowledge. Physical plants are being developed for easier and better AV utilization. Exchange of information and experience is hastening the necessary improvement of both teaching and learning.

—THOMAS S. JONES.

REFERENCES

1. "The Short Motion Picture for Medical School Classroom Instruction," *Journ. Med. Edu.*, February 1953.
2. "Library of Congress Cards for Motion Pictures—How Do We Use Them?" *Journ. Med. Edu.*, May 1953.

Two New AV Books

Two new books, prepared by the Medical Audio-Visual Institute, are to be published this month. They are "Films in the Cardiovascular Diseases" and "Films in Psychiatry, Psychology and Mental Health."

The cardiovascular study includes a survey of existing films, analysis of the film literature, listing of films available but not reviewed, and with abridged reviews. It represents the first portion of the MAVI survey of motion pictures in the cardiovascular diseases carried out under a National Heart Institute grant. An additional two-year study will complete the survey of motion pictures in this area of medical teaching. The book is published jointly by the American Heart Association and the Institute and is available from the association, 44 E. 23rd St., New York 10.

Four papers of analysis and historical perspective, 51 detailed reviews of representative current mo-

tion pictures, and a selected listing of useful films not reviewed, illustrated with selected still photographs from some of the films appraised, are included in the psychiatric book. It is useful for instructors who may utilize films in psychiatry and suggests some of the trends, problems and solutions of the motion picture as it has been used in this field of medical education. It is published by the Health Education Council 10 Downing St., New York City.

Teaching With Exhibits

At the University of Illinois Medical School, historical exhibits have been used over the past two years to augment the regular student course in this subject. Dr. Frederick Stenn, in collaboration with the medical illustration studios, has planned and correlated exhibits which relate the medical events of the past with present practices and ideas.

The exhibits are housed in burglar-proof built-in glass cases in the main hall of the school, measure 8' x 6' x 3', and contain relics, illustrations and descriptive matter. Each exhibit is held a month before replacement.

Exhibit topics so far have included: the evolution of the stethoscope, the gastroscope, the stomach pump, the hypodermic needle, the vaginal speculum and the x-ray tube; instruments from Pompei, Civil War surgery and hospitals; bone lesions of prehistoric American Indians, Babylonian medicine and the code of Hammurabi; and relics of the old Pennsylvania Hospital, the Massachusetts General Hospital; of William Beaumont, of Lord Lister and antiseptics, of Semmelweis and puerperal sepsis, of Virchow's concept of cellular pathology, of Edward Jenner and vaccination, of Chamberlen and obstetrical forceps, of Reginald Fitz and acute appendicitis, of James B. Herrick and coronary disease; work of Luckhardt, Roentgen, Coolidge and Grubbe.

Cancer Society TV Plans

The American Cancer Society, in cooperation with the Columbia Broadcasting System, has moved forward toward precise definition of their important experiment in educational television for postgraduate medical instruction.

A distinguished advisory committee of American medical educators has been named to assist in formulating policy and details of the program. A tentative 39 weeks of hour-long presentations has been outlined for production by New York City medical teams. The pattern of educational TV chain transmission has been mapped out for the first year's program. The placement and utilization of large screen TV projections is in development in the key cities of the project. Collaboration with local cancer societies and medical societies is in evolution.

When the program begins in the fall, American medicine will be seeing another milestone in postgraduate medical refresher training. The evolution of effective individual programs and the integration of television into the national postgraduate medical educational scene will be tested and hastened by this most significant program. Dr. Charles S. Cameron, medical and scientific director of the American Cancer Society, is in charge of the project.

Summaries of Film Reviews

Seizure: The Medical Treatment and Social Problems of Epilepsy

45 min., sd., b & w., 16 mm., 1951.

Dan Glover, war veteran with epilepsy, has a case history which begins with petit mal seizures as a boy. In the Army he receives a battle injury of the head, and on discharge begins having grand mal attacks. In a VA hospital Glover receives a complete diagnostic work-up and begins his education as a patient. Other types of epilepsy are demon-

Summaries of Film Reviews

strated. Glover begins anticonvulsant therapy with dilantin, and is given occupational therapy. Discharged under control, Glover finds employment difficult because of discrimination to epileptics, but is aided in his social adjustment through the total care offered by the medical professions and community.

This beautifully produced motion picture approaches the social and medical problems of epilepsy in an exhaustive, accurate and informative manner, but excludes psychiatric consultation and home follow-up by a social worker. Some qualifications are required for the facts as presented: (1) grand mal seizure may occur without antecedent petit mal attacks, (2) head injury is not a necessary precipitating factor, and (3) simple medical control is often sufficient for management. The film is structured as the case history of an epileptic, and is presented in dramatized documentary style with high skill and professional competence.

The structure and mode of presentation suggest that intelligent lay audiences are the primary film target. However, the inclusion of purely technical data such as hyperventilation, electroencephalography, craniotomy etc., while not beyond the comprehension of laymen, tend to make the film less suitable for laymen and therefore of subprofessional interest. As an introduction to epilepsy for medical students, nurses and others later to be concerned with this disease, the film presents much rich and moving material.

Audience: Lay audiences concerned with care of epileptics, medical students, nurses, hospital personnel.

Producers: Presentation Division, Veterans Administration, for Department of Medicine and Surgery, Veterans Administration, Washington, D. C.

Distribution: For purchase apply to United World Films, 1445 Park Avenue, New York 29, N. Y. \$57.50; For loan address requests to: Motion Picture Section, V. A. Central Office Film Library, U. S. Department of Agriculture, Washington 25, D. C.

Principles of Fracture Reduction

30 min., sd., color, 16 mm., 1953.

A historical glimpse of fracture handling introduces titles on the six principles of fracture reduction: "1. Reduce the fracture early; 2. Use slow, steady,

non-vibrating traction; 3. Neutralize the displacing pull of muscles; 4. Align the fragment which can be controlled with the one which cannot; 5. Traction requires counteraction; 6. Maintain reduction by suspension, traction and counteraction." The principles of traction are presented in animation and in orthopedic scenes. Farmhouse emergency fracture handling by a physician in cases of ulnar, humeral, tibial and femoral fractures is demonstrated in terms of the principles, while utilizing simple materials, untrained auxiliary personnel and crude methods.

The film is an admirable practical introduction to the principles of fracture reduction, emphasizing functional anatomy and demonstrating that knowledge of principles permits emergency fracture management with very simple materials. The farmhouse section makes certain assumptions which must be known: that accurate physical diagnosis of the nature and site of the fractures has been made, that adequate analgesia or anesthesia has been achieved, and that roller bandages, plaster, pulleys, et al. are at hand. In addition, the film inconspicuously separates the first aid role of the physician in complex cases from his tasks of definitive handling of certain simple fractures. The production can be commended on all counts for its motion picture excellence. The music may be inappropriate in a classroom setting but is fitting for other uses.

As an orientation for a wide range of professional audiences the film is forceful and memorable. In introductory orthopedics, in general practitioner training for emergencies, in physiotherapist instruction and as motivation or background for students of anatomy, the film will have a high effectiveness. The film lends itself to independent utilization of each of its two halves, and also to repeated showings with discussion and demonstration.—D.S.R. with MAVI Panel, 1953.

Audience: General practitioners, medical students, physiotherapists.

Sponsor: Department of Medicine & Surgery, Veterans Administration; **Producer:** Churchill-Wexler Film Productions, Los Angeles, Calif. **Scientific Adviser:** William Larmon, M.D., Northwestern University.

Distribution: Department of Medicine & Surgery, Medical Illustration Service, Veterans Administration, Washington 25, D. C.

Book Reviews

Endocrine Treatment in General Practice

Edited by **Max A. Goldzieher, M.D.**, and **Joseph W. Goldzieher, M.D.**, Springer Publishing Company, Inc., New York, 1953. Illustrated. 474 pp. with index. \$8.

Written by 21 clinicians from varied fields of medicine, this book is designed primarily as a guide in clinical endocrine therapy for the general practitioner. The content is arranged according to the symptoms presented, and no effort is made to give any detailed description of diseases of individual endocrine glands. The volume is divided into five sections: disorders related to age, disorders of metabolism and nutrition, disorders of the organ systems, disorders of resistance and neoplastic disease and a tabulation of currently available hormone preparations.

The book is up-to-date, fairly conservative in its approach, and should be valuable to the general practitioner who desires a ready reference book. It is not designed either for the student or for one specifically interested in endocrinology. No bibliography is given. The index is adequate.

Recent advances in endocrinology have made it difficult for the average general practitioner to keep up with the wealth of new information which is available, and this text provides a very useful and valuable addition to the individual physician's library. Not only are the diseases secondary to hormone deficiency adequately covered, but the use of hormones as therapeutic agents in many non-endocrine diseases is also discussed.

Medical Progress, 1953

A review of medical advances during 1952. **Morris Fishbein, M.D.**, editor. The Blakiston Company, New York, 1953. 301 pp. with index. \$5.

A useful review of medical advances during 1952, written for the busy practicing physician. There are 16 main chapters contributed by 25 competent authorities of recognized ability. The scope of the book is indicated by chapter headings: cardiology-heart disease; surgery; infectious diseases; arterial hypertension; rheumatic diseases; nutrition; new and important drugs and medications; dermatology; urology; psychiatry and psychosomatic medicine; obstetrics;

diseases of the chest; ear, nose and throat; gastrointestinal disorders; allergy; orthopedic surgery.

Considering the difficult task of such a yearbook, the authors are to be congratulated for presenting their material in a readable style.

Current Therapy, 1953

Edited by **Howard F. Conn, M.D.**, W. B. Saunders Company, Philadelphia, 1953. 335 pp. with index. \$11.

This is a multiple authorship text from 209 contributors, which aims to present therapeutic recommendations in a detailed and concise manner. The authors have recognized the vast amount of work being conducted and have incorporated the latest advances. Since the material is presented by many authors, each a specialist in his own field, it probably represents the best collection of therapeutic advice now available. Where there is more than one method of treatment, each is discussed separately. The diagnosis of the disease is not discussed, with the assumption that an accurate diagnosis has been made before treatment is instituted.

The material is excellently presented and the book is recommended as highly useful as a ready reference for the general practitioner.

The Official Preparations of Pharmacy, 2nd edition

Charles Oren Lee, Ph.D., professor of pharmacy, Purdue University School of Pharmacy. The C. V. Mosby Company, St. Louis, 1953. Illustrated. 544 pp. with index. \$5.50.

A general discussion of each class of pharmaceutical preparations, brief general information regarding their manufacture and certain pertinent facts relative to the nature and characteristics of the preparations are presented from the pharmacist's point of view. The book attempts to simplify and clarify the students' understanding of the Pharmacopeia and the National Formulary without duplicating the detailed content of these two reference books.

From the point of view of the medical student, as well as the physician, this book would be of assistance in giving a better understanding of some of the technical problems confronting the pharmacist.

Book Reviews

The Anatomy of the Nervous System, 9th edition

Stephen Walter Ranson, M.D., Ph.D., late professor of neurology and director of Neurological Institute, Northwestern University Medical School. Revised by **Sam Lillard Clark, M.D., Ph.D.**, professor of anatomy, The Vanderbilt University School of Medicine. W. B. Saunders Company, Philadelphia, 1963. 434 illustrations. 551 pp. with index. \$8.50.

The tradition of excellence established in the previous editions of Ranson-Clark's text is maintained in this new publication. It seems likely to retain its position as one of the foremost textbooks in the field.

Although a number of changes have been made, the organization of the book has not been altered radically. Sections, such as the summary of the efferent and afferent systems, reflexes and reflex arcs and clinical illustrations, have been retained. Of note is the expansion and increased emphasis of the functional considerations of the nervous system. The inhibitory and facilitory mechanisms of the brain stem and functional aspects of the cerebellum are presented. New figures, such as the general diagram of the cerebellum to show regional specialization, will be helpful to the student.

The bibliography is comprehensive. However, references to a few authors in the text are not cited. The cerebral cortex is discussed in considerable detail, but terms such as konicortex, allocortex and isocortex are excluded.

Treatment of Mental Disorder

Leo Alexander, M.D., director, the neurobiological unit, division of psychiatric research, Boston State Hospital. W. B. Saunders Company, Philadelphia, 1953. Illustrated. 507 pp. with index. \$10.

In the preface, Dr. Alexander states that his purpose is "to demonstrate as specifically as possible that psychic and physical aids in psychiatric treatments must be used as one instrument of therapy." He brings the experience of 23 years of practice, teaching and research in the field of mental disease to the book.

Every phase of treatment, ranging from analytical concepts to physical modalities, has been reviewed critically. Each chapter is followed by a detailed bibliography and every important paper in therapy of the last 20 years is mentioned in one of the chapters. The material is presented in clear and precise

language, and numerous charts and diagrams aid in understanding the content.

This book should be of special interest to young psychiatrists or to psychiatric residents because of the wealth of material and its completeness.

Biochemistry and Human Metabolism

Burnham S. Walker, M.D., Ph.D., professor of biochemistry, Boston University School of Medicine; **William C. Boyd, Ph.D.**, professor of immunochemistry, Boston University School of Medicine; **Isaac Asimov, Ph.D.**, assistant professor of biochemistry, Boston University School of Medicine. Foreword by **John T. Edsall, M.D.**, professor of biological chemistry, Harvard University. The Williams and Wilkins Company, Baltimore, 1952. Illustrated with graphs and charts. 812 pp. with index. \$9.

The authors have written an admirable text of biochemistry for the medical student. It is organized along functional lines, with sections on structure, control, growth, metabolism and pathology. The material is related and interwoven with physiological and clinical applications in a readable and interesting style. This is accomplished at the expense of more strictly biochemical and organic chemical subjects.

If a serious criticism could be leveled at the book, it would be that the emphasis on clinical applications might be so great as to detract from the essential biochemical principals which should be mastered by the first- or second-year medical student. Chapters on cancer, reproduction and heredity, infection and isotopes are indicative of the scope of the book as well as the author's awareness of the more rapidly advancing areas in medical science.

Problems of Aging

Transactions of the 14th Conference, September 7-8, 1951. Edited by **Nathan W. Shock**, chief, section on gerontology, National Heart Institute, National Institutes of Health and the Baltimore City Hospitals. Sponsored by the Josiah Macy Jr. Foundation, 565 Park Ave., New York 21. 138 pp. \$3.

This brief survey of the problems of gerontology has a multidiscipline approach, with a discussion of the interrelationships of these disciplines. Sections included, with discussions, are: biology and medicine, by John Esben Kirk; sociology, psychology, education and religion, by Robert J. Havighurst; economics, employment and welfare, by W. J. Cohen, and medical services, hygiene and housing by Joseph W. Mountin.

Shock and Circulatory Homeostasis

Transactions of the first conference, October 22-23, 1952. Editor, **Harold D. Green**, M.D., professor of physiology and pharmacology, Bowman-Gray School of Medicine. Josiah Macy Jr. Foundation, 16 W. 46th St., New York 36. 245 pp. \$3.50.

This volume is a verbatim report of the latest investigative work on the subject of shock. The subject is approached from three essentially different directions: one, the humoral derangements in shock; two, the neurogenic components of shock, and three, the infectious element in shock. The minute details of the animal experimentation involved are fascinating to the investigator interested in the field. However, it is difficult reading and not rewarding enough for general consumption.

Blood Clotting and Allied Problems

Transactions of the fifth conference, January 21-22, 1952. Edited by **Joseph E. Flynn**, M.D., associate professor of pathology, College of Physicians and Surgeons, Columbia University. The Josiah Macy Jr. Foundation, New York, 1952. Illustrated. 367 pp. with index. \$4.95.

The 1952 blood-clotting conference is a good example of a successful meeting. The subject matter ranged from a discussion of new anticoagulants, through the problems of the hemorrhagic state in radiation injury to antifibrinolysins. Owren's discussion, ably assisted by Alexander, of the newly discovered factors affecting coagulation is most useful. The whole conference has the unusual characteristic of clarifying and expounding difficult and contentious aspects of a very complex problem.

It is interesting to follow the discussions of the nature of the coagulation defect in the syndrome of whole-body radiation injury. It appears that the deficiency of platelets is crucial, and may well be the only etiologic factor, since reduction in platelets disturbs a number of carefully balanced systems.

The interested reader who digests this conference thoroughly should be well equipped to follow contemporary discussions of accelerator and inhibitor factors which have a variety of names but possess sufficiently definitive characteristics to permit the recognition of them and the diagnosis of disease due to their absence.

This conference can be recommended without qualification to all physicians and physiologists who are concerned with the clotting of blood.

Problems of Infancy and Childhood

Transactions of the sixth conference, March 17-18, 1952. Edited by **Milton J. E. Senn**, M.D., departments of pediatrics and psychiatry, Yale University School of Medicine. The Josiah Macy Jr. Foundation. 160 pp. \$2.50.

Topics in this conference are "Emotional Development in the First Year of Life," "Individual Tendencies in the First Year of Life," and "Excessive Crying in Infants—A Family Disease." The volume also includes a brief review note on WHO activities.

The informality of the conference itself, aimed to give maximum communication between representatives of the various disciplines, is preserved in these published transactions, which quote each speaker, questioner and commentator.

A wealth of fascinating, informative and stimulating descriptive material is presented as seen in differing lights by members of the discussing group. Much of the theorizing and persual of the "why" is left to the discussion, a method of presentation which this reviewer found advantageous and refreshing. A certain amount of repetition is inevitable in a work of this sort, and yet the same point analyzed in a different context is often fruitful repetition, or may shed light on a point left dangling before.

This is a book in which the reader interested in almost any aspect of human behavior and its development will find himself immersed as in a novel, and he can do some most enjoyable "creative" reading.

Gifford's Textbook of Ophthalmology, 5th edition

Francis Heed Adler, M.D., professor of ophthalmology, University of Pennsylvania Medical School. W. B. Saunders Company, Philadelphia, 1952. Illustrated with 281 figures and 26 color plates. 488 pp. \$7.50.

The fifth edition of this standard work is a complete revision, with elimination of some material which was of interest chiefly to students of ophthalmology, and extension of sections likely to be of especial value to the medical student, the general practitioner and the internist. No space is wasted with descriptions of ophthalmic curiosities, but all of the essential data which should be a part of every physician's background are expertly and lucidly presented.

An intelligently systematic approach to the diagnostic and therapeutic prob-

Books and Pamphlets Received

lems of the eye is skillfully outlined in the section of methods of examination and followed in subsequent sections which are devoted to detailed discussion of the disease entities of practical clinical importance. Throughout the book, those relationships which relate the disease to syndromes which are more generally familiar are constantly presented where possible. In this way much of the feeling of strangeness, which disturbs many physicians who are confronted with ophthalmic problems, should disappear.

Although the approach is so clear that this compact volume should be valuable for study or reference to any student or practitioner, there is enough detail to make it useful as a source of reference material even to the experienced ophthalmologist. Medical ophthalmoscopy is carefully discussed, with a particularly good section on retinal circulation and its relation to systemic disease. Other ocular aspects of general disease also are described well, and the section on ophthalmic surgery seems wisely restricted to considerations of indications for surgery, preoperative and postoperative care. The short chapter on therapeutic agents should be useful. Illustrations are well selected, and the index complete.

Encyclopedia of Aberrations

Edited by **Edward Podolsky, M.D.**, State University of New York Medical College, Philosophical Library, New York, 1953. 550 pp. \$10.

Dr. Podolsky, with the aid of a long list of eminent contributors, has made an excellent attempt to catalogue the vagaries of human behavior, describe them and discuss their significance. Many unusual works are defined briefly. Other topics are discussed at moderate length, while a number are treated extensively, sometimes by the reproduction of an entire article from the periodical literature. Most of the articles so reproduced are attributed to the author and journal. The other articles are unsigned.

Questions of balance and emphasis in such a work are matters of opinion, of course. It may be noted that such items as delusion and paranoia are not listed (except that one half-page is devoted to "paranoid states, defense mechanisms in"), and an attempt is made to cover psychopathic personality by one eight-page article on psychopathic disorders

in children, an 11-page account of the analysis of an aggressive psychopathic woman and five pages on the concept of psychopathic personality. On the other hand, ten pages are devoted to "fear of post-orgastic emptiness."

Although a good deal of emphasis is laid on legal implications, the vast subject of homosexuality is dealt with by one article reporting briefly three cases of female homosexuality and an eight-page report of the analysis of a sodomist, while pedophilia is not even listed.

Some cross references might have been helpful. There are, for example, separate items on somnambulism and "dream murders," and on hashish addiction and marihuana intoxication.

There is a vast amount of useful information contained between the covers of this book. It should find its way into every medical library where it will be of interest to the many physicians who would like to know more of human aberrations.

Books and Pamphlets Received

(As space permits, those with the greatest interest to our readers will be reviewed)

Textbook of Public Health, 13th edition

(Formerly Hope and Stallybrass) **W. M. Fraser, O.B.E., M.D., Ch.B., M.Sc., D.P.H.**, professor of public health, University of Liverpool. **E. S. Livingstone Ltd.**, Edinburgh and London, 1953. American distributors: The Williams & Wilkins Co., Baltimore. Illustrated. 663 pp. with index.

A Text-Book of Pharmacognosy, 6th edition

George Edward Trease, B. Pharm., Ph.C., F.R.I.C., F.L.S., director of pharmaceutical studies and head of the department of pharmacy in the University of Nottingham. Bailliere, Tindall and Cox, London, 1952. American distributors: The Williams & Wilkins Co., Baltimore. Illustrated. 821 pp. with index. \$8.

Clinical Diagnosis by Laboratory Methods, 12th edition

James Campbell Todd, Ph. B., M.D., late professor of clinical pathology, University of Colorado School of Medicine; **Arthur Hawley Sanford, A.M., M.D.**, emeritus professor of clinical pathology, the Mayo Foundation, University of Minnesota; **Benjamin B. Wells, M.D., Ph.D.**, professor of medicine, School of Medicine, University of Arkansas. W. B. Saunders Company, Philadelphia and London, 1953. 946 illustrations. 998 pp. \$8.50.

Morris' Human Anatomy, 11th edition

Edited by **J. Parsons Schaeffer, A.M., M.D., Ph.D., Sc.D.**, D. Litt., professor of anatomy and director of the Daniel Baugh Institute of Anatomy, emeritus, The Jefferson Medi-

cal College. The Blakiston Company, New York, Toronto, 1952. Illustrated. 1718 pp. with index. \$16.

The Roots of Psychotherapy

Carl A. Whitaker, M.A., M.D., professor of psychiatry and chairman of the department, Emory University; Thomas P. Malone, M.A., Ph.D., assistant professor of psychiatry and director of research, department of psychiatry, Emory University. The Blakiston Company, New York, Toronto, 1953. 236 pp. with index. \$4.50.

Annual Review of Physiology, Vol. 15

Victor E. Hall, editor, University of California School of Medicine, L.A.; associate editors: Jefferson M. Crisman and Arthur C. Giese, both of Stanford (Calif.) University. Annual Reviews, Inc., Stanford, and the American Physiological Society, 1953. 558 pp. with index. \$6.

Immunity

Sidney Raffel, Sc. D., M.D., professor of bacteriology, Stanford University School of Medicine. Appleton-Century-Crofts, Inc., New York, 1953. Illustrated. 531 pp. with index. \$5.

Anatomy of the Autonomic Nervous System

G. A. G. Mitchell, O.B.E., T.D., M.B., Ch.M., D.Sc., professor of anatomy and director of the anatomical laboratories in the University of Manchester. E. & S. Livingstone Ltd., Edinburgh and London, 1953. American distributors: The Williams & Wilkins Co., Baltimore. Illustrated. 256 pp. with index. \$10.

Dermatology in General Practice

Jacob Hyams Swartz, M.D., assistant professor of dermatology, Harvard Medical School and Post-graduate School. The Williams & Wilkins Company, Baltimore, 1953. Illustrated. 581 pp. with index. \$11.

The Epidemiology of Health

Iago Galdston, M.D., editor. Health Education Council, New York, Minneapolis, 1953. 197 pp. with index. \$4.

Epidemics in Colonial America

John Duffy. Louisiana State University Press, Baton Rouge, La., 1953. 274 pp. with index. \$4.50.

A Modern Practice of Obstetrics

D. M. Stern, M.A., M.B., B.Ch. (Cantab.), F.R.C.S., F.R.C.O.G., lecturer in obstetrics,

West London Hospital Medical School; C. W. F. Burnett, M.D. (Lond.), F.R.C.S., F.R.C.O.G., assistant lecturer in obstetrics, West London Hospital Medical School. Bailliere, Tindall and Cox, London, 1952. American distributors: The Williams & Wilkins Co., Baltimore. Illustrated. 248 pp. with index. \$7.

The Psychology and Psychotherapy of Otto Rank

Fay B. Karpf, Ph.D. The Philosophical Library, New York, 1953. 129 pp. with index. \$3.

Physiological Foundations of Neurology and Psychiatry

Ernst Gellhorn, M.D., Ph.D., professor of neurophysiology, University of Minnesota. The University of Minnesota Press, Minneapolis, 1953. 556 pp. with index. \$8.50.

Medicine, Volumes I & II

Edited by Hugh G. Garland, T.D., M.D., F.R.C.P., senior clinical lecturer in neurology, University of Leeds; William Phillips, M.D., B.Sc., F.R.C.P., senior clinical teacher in medicine, Welsh National School of Medicine. St. Martin's Press Inc., New York, 1953. Illustrated. 2146 pp. with index. \$25.

Medical Clinics, Maimonides Hospital of Brooklyn, 1950-1951. 222 pp. Illustrated with charts.

Women are My Problem. Autobiography of J. L. Babis, M.D., F.A.C.S. consultant in obstetrics and gynecology, Mt. Sinai Hospital, Cleveland. Comet Press Books, New York, 1953. 223 pp. \$3.

Working Conference on Nursing Education. World Health Organization Technical Report Series, No. 60. February 1953. 80 pp. 20 cents. May be obtained from the International Documents Service, Columbia University Press, New York 27.

Expert Committee on Hepatitis. First Report. World Health Organization Technical Report Series, No. 62. March 1953. 24 pp. 20 cents. May be obtained from the International Documents Service, Columbia University Press, New York 27.

Chronicle of the World Health Organization, Vol. 7, No. 3. March 1953. 30 pp. 20 cents. May be obtained from the International Documents Service, Columbia University Press, New York 27.

Life Insurance Medical Research Fund, 7th annual report, 1951-52. New York Academy of Medicine Building, 2 East 103rd Street, New York. Illustrated. 52 pp.

Abstracts and Excerpts

Davidson, Carter, *Blind Alleys in College Finance*, "The Educational Record." Vol. 34, No. 2: 108-112, April 1953.

Some methods of financing institutions of higher learning have been evaluated and discarded by the Commission on Financing Higher Education in preparing their 191-page report, "Nature and Needs of Higher Education." Greater economy in administering schools has been found impossible without lowering standards. Cost accounting procedures, advocated by many business men, were found incompatible with the purposes of higher education.

Twenty-four-hour operation of schools is impossible in some areas, and equipment necessary to convert classrooms for other uses involves additional expense. Budgeting a department in proportion to the amount of income it takes in is impossible since some courses, such as medicine, require more money than others. Cooperative projects involving equipment or library facilities shared with other schools are not universally feasible.

The commission does not recommend that schools engage in business enterprises to make money but it does advocate group practice of medicine under university auspices. Stopping federal government support at its present point is recommended unanimously.

The strength of American higher education lies in its diversity, which implies that financial support should come from diverse sources including religious groups, labor, charitable foundations, corporations and local taxes.

Abrams, Frank W., *Can Our Colleges Survive?* "This Week Magazine." May 9, 1953: 10.

The plight of the private college is particularly grave because it is difficult today to accumulate the kind of fortune that makes support of educational institutions possible. Corporate and organizational gifts must take over where private philanthropy leaves off if the schools are to survive. Although corporations are allowed to deduct charitable contributions up to 5 per cent of their net taxable income, grants from them for all purposes, of which education is only a

part, actually are nearer 1 per cent. Full tax exemption would total approximately \$1½ billion, more than the total operating costs of all private colleges.

Corporate giving is handicapped by laws which are vague about whether giving to general education is a justified use of the firm's money by its managers. Trial cases now in court may clarify these issues. Problems will remain concerning which schools are the most deserving of financial support and the possibility of exchange other than financial.

The recently formed Council for Financial Aid to Education will help answer some of the questions. Its first purpose is to increase public knowledge of the inter-relationship between education and private business. It will also advise prospective donors and recipients how to plan, adopt and carry out programs leading to the most effective kind of aid.

"The Pennsylvania Medical Journal," *Cooperation Between AMEF and Alumni Funds of Medical Colleges* (Ed.) Vol. 56, No. 2: 117-118, February 1953.

The establishment of the American Medical Education Fund has confused some donors who have been contributing to medical education through their alumni group. Alumni groups and the AMEF are working together to assure medical school graduates that they share a common purpose. The AMEF will earmark physician gifts to the college of the donor's choice. Alumni groups are co-operating by advising the AMEF of contributions. The Medical Society of the State of Pennsylvania serves as a liaison between medical schools, the AMA and individual county societies. Thus, the gift of the alumnus may be recorded at county, state and national levels.

Reid, Roger D., *Freedom and Finance in Research*, "American Scientist." Vol. 41, No. 2: 286-292, April 1953.

A report from the Research and Development Board of the Office of Naval Research estimates the sum spent for support of research in the United States in 1952 at nearly \$3 billion. There has been a steady increase in the past few years in the amount of money used in

this way. However, the cost of research is not a reliable assessment of its worth. Present-day trends in research, such as group work and the use of expensive equipment, contribute to rising costs.

The multiplicity of government agencies supporting research is necessary to give proper latitude in decisions on grants. Even with decisions being made by experts in the various fields, some worthy projects remain unsupported. The trend toward increased government support is unfortunate. More funds for basic research are necessary, for the stockpiling of knowledge is our country's "secret weapon." Freedom in research is essential to the scientist.

Leveroon, Edward H., et al. **Roundtable Report: Views on Internship Study**, "Journal of the Student American Medical Association." Vol. 2, No. 5: 30-31+. May 1953.

Questions considered in the year-long study of the internship were: 1. Does the internship have a valid place in modern medical education? 2. If so, where and how should it be conducted? 3. What changes in the council's standards for approval are indicated in order that they may reflect adequately present concepts of intern education? 4. Is the present disparity between the number of internships and the number of available applicants creating an undesirable situation? 5. If so, what corrective measures are indicated?

Commenting for the deans of medical schools on the importance of the study, Dr. John McK. Mitchell, University of Pennsylvania, says it is the duty of the medical school to give general instruction on what constitutes a good internship, to counsel the individual student and assist in the mechanics of applications.

Speaking for hospital administrators, Dr. John C. Leonard, director of medical education at Hartford (Conn.) Hospital, says that the value of the internship is dependent largely on the ability of the intern to become a working member of a team, remembering the ideals of service and responsibility.

Dr. Buel S. Smith, intern at University Hospital, Ann Arbor, Mich., speaking for interns, stressed that the most important factor in a good educational program is an attending staff which has the time and aptitude to teach and the

ability to inspire young men to work and learn. If interns were required to perform only those duties which properly belong to them and received commensurate salaries, the apparent shortage would be reduced and the value of the year enhanced.

Joe Ebbinghouse, Indiana University School of Medicine, summarized the student attitude toward the survey. The prime aim of the report is to outline a means of providing the best in ultimate patient care. Education is the primary consideration, but practical training also is most valuable.

"The Journal of the Medical Society of New Jersey," **Physician Distribution** (Ed.) Vol. 50, No. 3: 89-90. March 1953.

The lack of physicians in rural New Jersey is caused partially by the general shift of population to the cities, since most students return to practice in the locale in which they grew up. The emphasis placed on specialty training in medical education is also responsible. If not trained in a specialty himself, the student is made to feel he must be near specialists. A greater effort on the part of the medical school to produce a well-rounded physician would help the situation. Better highways, better rural schools and better rural health facilities and hospitals would also help recruit physicians to these areas. The medical society can help the young physician find a proper location.

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Stalnaker, John M. **Viewpoints on Scholarships**, "The College Board Review." May 1953, No. 20: 345-350.

The Personnel Exchange

Faculty Vacancies

• **ASSISTANT LIBRARIAN** for a large, well organized library serving a midwest college of medicine and school of nursing. Excellent opportunity for reference, circulation and technical processes experience. Academic rank. Salaries above A.L.A. standard. Requires a degree in library science. Address: V-6.

• A one-year salaried training position will be available in the consultation clinic for EPILEPSY, University of Illinois College of Medicine, beginning July 1, 1953. Address application or requests for further information to: Dr. Frederic A. Gibbs, 912 S. Wood St., Chicago 12.

• **PHYSIOLOGIST**, Ph.D. or M.D. Desired for permanent position in physiology department. Preference given to those with interest in cardiovascular or neuropsychology. Teaching program of 16 weeks duration; remainder of year available for research. Further information may be obtained from: Dr. Harold C. Wiggers, professor of physiology of the College of Medicine, Albany Medical College, Union University, Albany, N. Y.

• The department of MICROBIOLOGY and IMMUNOLOGY of a medical school in the midwest is scheduled to move into new and enlarged quarters toward the end of 1953. The staff is to be increased by two full-time members. Those interested and experienced in teaching medical students are requested to give information concerning their personal history and qualifications and the desired rank and salary. Address: V-7.

• The departments of BIOLOGY, ANATOMY, BIOCHEMISTRY and PHARMACOLOGY have vacancies for four professors at the Royal College of Medicine in Baghdad. The salaries are open. For further information address requests directly to: Glenn S. Usher, M.D., chief, Health and Sanitation Division, TCA/Iraq, c/o American Embassy, Baghdad, Iraq.

• Applications are invited for positions of assistant or associate professor of MICROANATOMY and GROSS ANATOMY, duties to commence September 1, 1953. Further information may be obtained from Dr. R. L. deC. H. Saunders, anatomy department, Dalhousie University, Halifax, N. S., Can.

• **Assistant resident in CLINICAL PATHOLOGY.** Approved for entire training by College of American Pathologists; 1,000-bed teaching hospital; modern equipment; laboratory performs over 1,200 tests per day; research laboratories and facilities available; department has own teaching and research programs. Complete maintenance, including room, board, laundry and medical care, plus stipend of \$900 per year. Contact director, department of clinical pathology and hospital laboratories, Medical College of Virginia, Richmond 19.

• Opportunity for professorships in departments of ANATOMY, PHYSIOLOGY, and PHARMACOLOGY in well established medical school. Must be mature and have experience in, or capacity for departmental administration. Salary commensurate with experience and ability. Address: V-9.

Personnel Available

• **PHYSIOLOGIST**—Ph.D.; age 36. Active researcher and teacher at university level, desires teaching-research position in medical school. Fine scholastic record, publications, National Research Council fellow, five years' teaching experience human, general physiology. Position with permanence desired, but will consider appointment permitting working for M.D. degree. Available after June 1953. Address: A-22.

• **CLINICAL BIOCHEMIST:** Certified internist, 35. Interested in hospital chemical laboratory, teaching, parenteral fluid therapy, metabolic disorders, clinical investigation. Address: A-28.

• **Ph. D. in all BASIC SCIENCES:** man. Assistant professor at present. Training in all basic sciences. Teaching experience in anatomy (gross and microscopic), physiology and pathology (medical and clinical). Minimum salary stipulated. Address: A-31.

• **SURGEON:** Interested in teaching and research; Certified by the American Board of Surgery; Fellow, American College of Surgeons; two years teaching experience in clinical surgery; married; category 4 service U.S. Navy. Full-time work preferred. Address: A-32.

To aid in solution of the problem of faculty vacancies, MEDICAL EDUCATION will list persons and positions available, as a free service. The school, department or person may have the option of being identified in these columns or of being assigned a key number for each position listed. Mail addressed to key numbers will be forwarded to the person or department listing the request.

Information for these columns should reach the Journal office, 185 N. Wabash Ave., Chicago 1, not later than the 13th of the month preceding publication.

Personnel Available

• **SURGEON:** 33, interested in career in academic surgery. Anticipates completion of American Board of Surgery certification March 1953; application accepted for fellowship in the American College of Surgeons for 1953. Currently holds staff appointment in department of surgery of a medical school. Wife and two children. Has training in basic research and anxious for opportunities in this direction. Full-time position preferred. Address: A-33.

• **ANATOMIST:** Ph.D., assistant professor, male, married. Four years teaching experience in medical school gross anatomy. Research and interest in neuroanatomy. Available August 1953. Address: A-34.

• **NEUROANATOMIST:** Man, 43, married, Ph.D., member American Association of Anatomists. Experience: seven years teaching neuroanatomy, four years teaching gross anatomy; basic neurological research; administration; membership on several medical school administrative committees; original training under highly distinguished neuroanatomists. Publications. Member of scientific and scholastic societies. Noteworthy references. Experience includes reorganization of premedical program in large college with salutary results. Desires medical school position where interests in teaching, research and administration can be fulfilled. Available July 1953. Address: A-36.

• **ANATOMIST:** Ph.D., man, 40. Desires teaching position in anatomy (gross or microscopic). Teaching experience in histology, embryology and gross anatomy in dental and medical schools. Publications. Excellent references. Now employed but may be available on short notice. Address: A-37.

• **BACTERIOLOGIST; PARASITOLOGIST; PUBLIC HEALTH INSTRUCTOR:** Ph.D., man. Desires teaching position in bacteriology, parasitology or preventive medicine. Teaching experience in these subjects in liberal arts and professional schools. Now employed but may be available on short notice. Publications. Excellent references. Address: A-38.

• **INTERNSHIP:** 35 years. Certified. Would like full-time teaching position, associate professor of medicine or higher in medical school where there is an opportunity for organized research. Interested in metabolism and isotope research. Has been connected with teaching university since getting out of service. Associate in medicine 1951. Numerous publications. Address: A-39.

• **OPHTHALMOLOGIST:** Age 33, married, priority 4, certified, advanced degree in ophthalmology. Engaged now in medical school teaching, research and private practice. Publications include article, monograph and review. Trained in major American institutions. Desires full-time opportunity to combine teaching, research and clinical work. Address: A-40.

• **BIOCHEMIST:** Ph.D., age 26, married. Four years' research on the biochemistry of human arterial smooth muscle, contraction and tonus mechanisms in relation to hypertension and arteriosclerosis. Desires opportunity to continue biochemical research on the arterial wall under cardiovascular investigator, with possibility of study toward M.D. degree. Available October 1953 or June 1954. Address: A-41.

• **BIOCHEMIST:** Man, 32, family, Protestant. B.S. chemistry; M.S., Ph.D., biochemistry. Minors: physiology, microbiology, organic chemistry. Societies. Publications: book in progress. 3 years experience undergraduate, 4 years graduate assistant, 1 year industrial chemist, 3 years army medical technologist, 1 year cancer research. Currently 2 years assistant professor biochemistry in medical school. Research interests: carbohydrates, nucleic acids, analytical biochemistry, clinical chemistry. Desires change for professional, financial advancement. Available 2-3 months after job agreement is concluded. Address: A-42.

• **BIOCHEMIST or PHYSIOLOGIST:** Ph.D., age 31. Active researcher and teacher at university medical school for five years. Fine scholastic record, public health senior research fellow, many publications. Interested in position allowing work for M.D. degree. Address: A-43.

• **ANATOMIST:** 32, married, children. National Cancer Institute fellow (1 year); experience in all branches of anatomy. Publications on request. Interested in research as well as teaching. Excellent references. Available after July 1, 1953. Address: A-44.

• **PHARMACOLOGIST:** M.D., Ph.D. Assistant professor, medical school, age 38, married. Eight years experience teaching pharmacology to medical, dental and pharmacy students. Research experience with systemic anti-infectives and autonomic drugs. Publications. Desires teaching and/or research position. References. Address: A-45.

• **BIOCHEMIST-PHYSIOLOGIST:** Man, 30, married, Ph.D. Now assistant professor at medical college. Enthusiastic teacher with several years of research experience. Desires academic position at medical, dental or pharmacy school or liberal arts college where good teaching is considered important. Interested in graduate training program and fundamental research, if available. Administrative duties are very welcome. Publications. Location immaterial. Rank and salary open. Address: A-47.

• **TEACHING FELLOWSHIP — OTOLARYNGOLOGY:** special interest in problems of tumors in region of head and neck, particularly those related to cancer of mouth, larynx and pharynx. Man, single, 37. M.D. (surgeon) University of Cordoba. Head of clinic and assistant chief, department of otolaryngology, Hospital Espanol, Cordoba, 3 years; intern and resident, U.S., 1949-1951. Member scientific societies. Excellent references. Argentine citizen; good command of English. Address: A-49.

• **TEACHING FELLOWSHIP — GYNECOLOGY:** Man, 41, married, M.D., University of Cordoba. Supervision of gynecological patients 1930 to present, 3 years teaching in medical school and hospital. Member scientific societies. Publications. Argentine citizen; good command of English. Address: A-50.

• **YOUNG SURGEON:**—Certified general and thoracic boards. University trained. Major interest thoracic and cardiac surgery. Experienced in applied cardio-pulmonary physiology. Some publications. References. Wishes full-time teaching appointment. Address: A-51.

• **PHARMACOLOGIST—ADMINISTRATOR:** Man, 31 married. Ph. D. Desires academic position,

Personnel Available

preferably with teaching duties. Four years industrial experience, and five years academic experience. Interest in toxicology and neuropharmacology, and graduate student training. Highest references, publications. Address: A-32.

• **RADIOBIOLOGIST - HISTOLOGIST - ZOOLOGIST:** Man, 49, married, Sc.D. Experience mainly in radiobiology and histology. Prefers position in research institution or teaching and research in histology or zoology department with radiobiological research opportunities, or research appointment in department of roentgenology or radiobiology. Address: A-33.

• **PARASITOLOGIST:** D.Sc., man. Internationally known—widely travelled. Guggenheim fellow. Effective teacher on undergraduate level in zoology, in medical school and postgraduate clinical level. Numerous research papers and monographs in taxonomy of parasites, surveys, chemotherapy and toxicology. Gets on well with colleagues. Desires position in fall. Salary secondary to time for research. Liberal arts college will be considered. Address: A-54.

• **ADMINISTRATOR-EDUCATOR:** Man, 38; B.S., M.A., Ed.D. fellow, national science-medical societies; 17 years experience administrator national public health-medical organizations; university professional school teaching; 5 years intensive experience medical school organization management including affiliation, curriculum, fellowship and research programs, fund raising, physical development, purchasing, student selection; author six books, numerous papers. Seeks top-level administrative post medical school, foundation, east. Address: A-55.

• **Position desired in medical school or university hospital by woman with M.S. in bacteriology.** Three years experience teaching bacteriology, serology, parasitology and clinical microscopy to medical students and medical laboratory technicians. Excellent experience in writing and statistical interpretations in medical fields. Formerly in charge of university hospital bacteriology and serology department. Address: A-56.

• **INTERNIST:** 35. Certified. Desires full-time academic appointment with research. Currently assistant professor of medicine, director of basic research laboratory (biochemistry and physiology), supported by several grant foundations. Active in clinical teaching. Research and clinical experience at several leading institutions, including fellowship abroad. Priority IV. More than 40 publications. Address: A-57.

• **RADIOLOGIST:** 37. Assistant professor. Male. Married. 4 years teaching experience. Available on short notice for full-time academic position. Address: A-58.

• **BIOCHEMIST:** Ph.D., 1953. M.S. Analytical chemistry. Desires academic and/or research position. Strong medical science background. Four years diversified teaching experience. Research experience in enzymes, trace metals and histochemistry. Age 32, family, veteran. Sigma XI, publications. East preferred. Address: A-59.

• **M.D., Ph.D.—40 years of age, married.** Interested in teaching as associate professor or higher of PREVENTIVE MEDICINE and PUBLIC HEALTH in medical or public health school; prefer associated opportunities for field study in public health. 15 years experience include general public health administration, industrial hygiene, epidemiology, immunology, basic and applied research, and some undergraduate and postgraduate teaching. Publications. Excellent references. Northeastern states preferred. Available on short notice. Address: A-60.



SITUATIONS WANTED

(a) **ALLERGIST:** Interested teaching allergy; clinical & laboratory research with oppty for priv practice; B.S., M.D. Temple Med Sch; certified internist, ellg Allergy Boards; several years, undergraduate and postgraduate teaching, allergy, important med sch; also co-chief, allergy clinic, graduate hosp and chief, allergy clinic and chief, medicine, 200 bed vol gen'l hospital.

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